User's Manual

Titan series

Revision 2.3.7
(May, 2012)

WARNING

Do not attempt to disassemble your Titan device. Doing so may void your warranty. There are no serviceable parts inside. Please refer all servicing to qualified personnel.

TRADEMARKS

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TECHNICAL SUPPORT

If you have any questions regarding the information provided in this guide, call our technical support help line at 425-885-3863, or our toll free help line at 1-877-AVI-TECH. You can also email us at support@avitechvideo.com

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Warranty

Avitech International Corporation (herein after referred to as “Avitech”) warrants to the original purchaser of the products manufactured in its facility (the “Product”), that these products will be free from defects in material and workmanship for a period of one (1) year or fifteen (15) months from the date of shipment of the Product to the purchaser. There is a three (3) month grace period between shipping and installation.

If the Product proves to be defective during the one (1) year warranty period, the purchaser’s exclusive remedy and Avitech’s sole obligation under this warranty is expressly limited, at Avitech’s sole option, to:
(a) repairing the defective Product without charge for parts and labor; or
(b) providing a replacement in exchange for the defective Product; or
(c) if after a reasonable time is unable to correct the defect or provide a replacement Product in good working order, then the purchaser shall be entitled to recover damages subject to the limitation of liability set forth below.

LIMITATION OF LIABILITY: AVITECH’S LIABILITY UNDER THIS WARRANTY SHALL NOT EXCEED THE PURCHASE PRICE PAID FOR THE DEFECTIVE PRODUCT. IN NO EVENT SHALL AVITECH BE LIABLE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS FOR ANY BREACH OF THIS WARRANTY.

If Avitech replaces the defective Product with a replacement Product as provided under the terms of this Warranty, in no event will the term of the warranty on the replacement Product exceed the number of months remaining on the warranty covering the defective Product. Equipment manufactured by other suppliers and supplied by Avitech carries the respective manufacturer’s warranty. Avitech assumes no warranty responsibility either expressed or implied for equipment manufactured by others and supplied by Avitech.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE EXPRESSLY DISCLAIMED.

This Hardware Warranty shall not apply to any defect, failure, or damage:
(a) caused by improper use of the Product or inadequate maintenance and care of the Product;
(b) resulting from attempts by other than Avitech representatives to install, repair, or service the Product;
(c) caused by installation of the Product in a hostile operating environment or connection of the Product to incompatible equipment; or
(d) caused by the modification of the Product or integration with other products when the effect of such modification or integration increases the time or difficulties of servicing the Product.

Any Product which fails under conditions other than those specifically covered by the Hardware Warranty, will be repaired at the price of parts and labor in effect at the time of repair. Such repairs are warranted for a period of ninety (90) days from date of reshipment to customer.

Extended Warranty Options

Avitech offers OPTIONAL Extended Warranty plans that provide continuous coverage for the Product after the expiration of the Warranty Period. Contact an Avitech sales representative for details on the options that are available for your Avitech equipment.

Services and Repairs Outside the Warranty Period

Avitech make its best offer to repair a product that is outside the warranty period, provided the product has not reached its end of life (EOL). The minimum charge for such repair excluding shipping and handling is $200 (US dollars).

Regulatory Information

NOTE: Marking labels located on the exterior of your device indicate the regulations that your model complies with. Please check the marking labels on your device and refer to the corresponding statements in this chapter. Some notices apply to specific models only.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Avitech is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

European Union CE Marking and Compliance Notices

Statements of Compliance

English
This product follows the provisions of the European Directive 1999/5/EC.

Danish
Dette produkt er i overensstemmelse med det europæiske direktiv 1999/5/EC.

Dutch
Dit product is in navolging van de bepalingen van Europees Directief 1999/5/EC.

Finnish
Tämä tuote noudattaa EU-direktiivin 1999/5/EC määräyksiä.

French
Ce produit est conforme aux exigences de la Directive Européenne 1999/5/EC.

German
Dieses Produkt entspricht den Bestimmungen der Europäischen Richtlinie 1999/5/EC.

Greek
Το προϊόν αυτό πληροί τις προβλέψεις της Ευρωπαϊκής Οδηγίας 1999/5/EC.

Icelandic
Þessi vara stenst reglugerð Evrópska Efnahags Bandalagsins númer 1999/5/EC.

Italian
Questo prodotto è conforme alla Direttiva Europea 1999/5/EC.

Norwegian
Dette produktet er i henhold til bestemmelsene i det europeiske direktivet 1999/5/EC.

Portuguese
Este produto cumpre com as normas da Diretiva Européia 1999/5/EC.

Spanish
Este producto cumple con las normas del Directivo Europeo 1999/5/EC.

Swedish
Denna produkt har tillverkats i enlighet med EG-direktiv 1999/5/EC.

Australia and New Zealand C-Tick Marking and Compliance Notice

Statement of Compliance

This product complies with Australia and New Zealand's standards for radio interference.

Preface

Welcome

Congratulations on purchasing this Avitech Titan.

The Titan multiviewer is suitable for monitoring multi-images on the computer and video processing, providing multi-format computer (DVI / VGA) and video processing. With the Titan module, computer and video inputs can be displayed in high resolution from 800×600 up to 1920×1200. An integrated on-screen display (OSD) offers alarm reporting, labels, and borders.

Your Titan can be used as a standalone unit, or cascaded (daisy-chained) with MCC-8004 modules (the Titan module must be non-HDCP compliant), providing facility-wide computer and video monitoring capabilities.

About this Manual

This manual contains comprehensive information about your Avitech Titan to help you operate the device.

Throughout the manual, the following conventions are used to distinguish elements of text.

> **NOTE:** provides additional hints or information that requires special attention.

> **CAUTION:** identifies important information which, if not followed, may result in loss of data or damage to your device.

Any name of menu, command, icon or button that you can see on the screen is shown in a bold typeset. For example:

On the **Start** menu, select **Settings**.

1 Getting Started

This chapter introduces you to the features and specifications, as well as the external components of your Avitech Titan. It also guides you through the process of setting up your Titan for use.

> **NOTE:** Depending on the model you purchased, the cabinet color and the look of the accessories may be different from the ones shown in this manual.

1.1 Package Contents

After unpacking the shipping carton, you should find these standard items:

Avitech Titan-8000 series

10-inch RS-485 Cascading Cable

12-inch DVI-I Cascading Cable

Standard Power Cable (US customers)

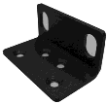
Redundant DC Power Supply (optional) *

DVI to VGA Adapter

RJ-50 GPIO / Tally Terminal Block

DVI-I Breakout Cable (optional)

Utility Disc (contains software and user's manual)



Ear (already installed on Titan upon order for assembly on to rack mount)

DVI-I Male-to-Female Cable (optional) **

Set of screws (already installed on Titan upon order for assembly on to rack mount)

Avitech MKC (optional) ***

Avitech TACP (optional) ***

* This is an optional external power supply along with the associated dual power supply PCBA inside the Titan to achieve power redundancy. If this optional external power supply is connected, power (AC or DC) can be unplugged on the Titan without affecting the power supply to the module.
** When using the DVI-I female connector on the Titan, the connector may easily be damaged if the DVI-I plug (male) has bended pins. With this optional DVI-I male-to-female cable permanently connected to the Titan, frequent connection and disconnection will only occur to the female end of this short cable, rather than to the female connector of the Titan.

*** The Avitech TACP and Avitech MKC can be used with the Titan. Contact your authorized dealer or refer to the TACP / MKC User Manuals for more details.

1.2 Product Features

Model	DVI / VGA / YPbPr Input	Video Input
Titan-8002V	2	N/A (not applicable)
Titan-8004V	4	N/A
Titan-8004C	2	2 PAL /NTSC
Titan-8008C	4	4 PAL / NTSC
Titan-8004U	2	2 HD / SD-SDI / PAL / NTSC
Titan-8008U	4	4 HD / SD-SDI / PAL / NTSC

- Automatic sensing of HD / SD-SDI and NTSC / PAL analog input.
- Automatic detection of optimal display resolution.
- Computer graphic input: DVI-I input resolution up to 1920×1200 (WUXGA).
- Up to 26 internal configuration presets.
- On-screen display of labels, borders, and video alarms.
- Communication control via IP or RS-232.
- Compatibility with Phoenix-G software for configuration, monitor layout, and multiple-system control.
- Avitech ASCII Protocol (AAP) support.
- HDCP-compliant

Specifications

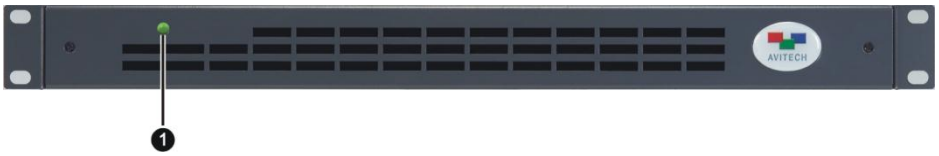
Parts		Specifications
Inputs	Video	Automatic sensing via BNC HD-SDI (1080i/59.94, 1080i/60, 1080i/50, 720p/59.94, 720p/60, 720p/50) SD-SDI (NTSC/525i, PAL/625i, 525p/59.94, 625p/50) NTSC / PAL Number of inputs: (for Titan-8002V) 2 automatic detection VGA / DVI (YPbPr) (for Titan-8004V) 4 automatic detection VGA / DVI (YPbPr) (for Titan-8004C) total is 4 2 automatic detection VGA / DVI (YPbPr) 480P 60 Hz, 720P 50 / 60 Hz, 1080i 50 / 60 Hz, 576P 50 Hz, plus 2 automatic detection PAL / NTSC (for Titan-8008C) total is 8 4 automatic detection VGA / DVI (YPbPr) 480P 60 Hz, 720P 50 / 60 Hz, 1080i 50 / 60 Hz, 576P 50 Hz, plus 4 automatic detection PAL / NTSC (for Titan-8004U) total is 4 2 automatic detection VGA / DVI (YPbPr) 480P 60 Hz, 720P 50 / 60 Hz, 1080i 50 / 60 Hz, 576P 50 Hz, plus 2 automatic detection HD / SD-SDI / PAL / NTSC (for Titan-8008U) total is 8 4 automatic detection VGA / DVI (YPbPr) 480P 60 Hz, 720P 50 / 60 Hz, 1080i 50 / 60 Hz, 576P 50 Hz, plus 4 automatic detection HD / SD-SDI / PAL / NTSC.
	DVI-I	Automatic detection Input resolution: up to 1920×1200 (WUXGA) For background display or for cascading multiple modules together Number of input: 1
Output		Resolution from 800×600 up to 1920×1200 (WUXGA) via DVI-I connector, simultaneous DVI and RGB (for non-HDCP models only) **NOTE:** Simultaneous DVI and RGB output is not available in Titan models that support HDCP. Number of output: 1
GPI		8 inputs
Data input / output	Serial port	Number of port: 1 Baud rate: up to 1 Mbaud RS-232
	Ethernet	Network Type: 100Base-T Number of port: 1 RJ-45
	RS-485	Number of ports: 2
Power supply		Consumption less than 30 watts 100 – 250 V, 50 / 60 Hz (external)
Housing		Metal

Parts		Specifications
Dimension (W×D)	1 RU	483×254 mm (19×10 inch)
Weight		3.6 kg (8 lbs)
Environment	Temperature	Operating: 0 °C (32 °F) to 40 °C (104 °F) Storage: –10 °C (–4 °F) to 50 °C (122 °F)
	Humidity	0 % to 80 % relative, non-condensing
Safety regulations		FCC / CE / C-Tick, Class A

Operating Features

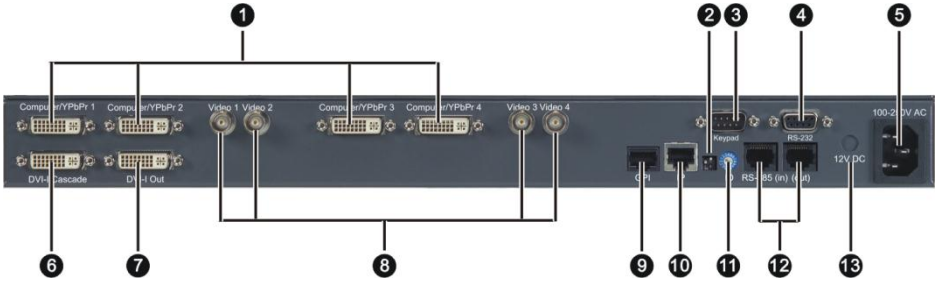
- Standalone operation (single Titan) with control via RS-232 cable / IP or; multiple operations.
- One Titan can fit in a single rack unit (RU) space for a maximum of eight video inputs and one multimedia input.
- Single scaleable DVI input for use with VGA / DVI / NTSC / PAL inputs.
- Computer (DVI-I) input can be in any size / position.
- RJ-50 GPI terminal block adapter is provided for tally or loading presets.
- Up to 26 presets / configurations can be saved and recalled from the module's Flash EEPROM.
- Compatible with MCC-8004 modules (non-HDCP compliant Titan only).
- Supports Avitech Sequoia Station-104/204 (mouse / keyboard controller)

1.3 Identifying the Front Hardware Component



Ref	Component	Description
❶	Power LED	Lights green when the Titan is powered on.

1.4 Identifying the Rear Hardware Components



Ref	Label / Component	Description
❶	**VGA / DVI Input 1 / 2 / 3 / 4**	DVI-I ports for VGA / DVI (YPbPr) inputs.
❷	**DIP switches**	The left dip switch is for updating the firmware, while the right dip switch is for returning the Titan to the factory-default setting.
❸	**Keypad**	RS-232 connector for signal from optional Avitech Sequoia Station-104/204 (Mouse Keyboard Controller) or numerical Simplified Control Panel (SCP) keypad.
❹	**RS-232**	RS-232 connector for signal from the computer.
❺	**100-250V AC**	Power jack for connecting the AC power cord.
❻	**DVI-I Cascade**	DVI-I connector for multimedia input (cascade from other Titan device or from other video source as background image).
❼	**DVI-I Output**	DVI-I connector for output to monitor display.
❽	**Video Input 1 / 2 / 3 / 4**	BNC connectors for HD / SD-SDI / NTSC / PAL video inputs.
❾	**GPI**	RJ-50 connector for GP input.
❿	**IP**	Ethernet connector for using the computer's Phoenix-G software to perform setup on the Titan.
⓫	**ID**	Rotary dial to assign unique addresses in systems with two or more units.
⓬	**RS-485 (in) (out)**	RS-485 connectors for serial cascading input / output.

Ref	Label / Component	Description
⓭	**12V DC** (optional)	Power connector for connecting the power adapter.

1.5 Getting Your Titan Ready for Use

Basic Hardware Connections

Perform the following steps to get your Titan set up and running:

> **NOTE:** The steps outlined next would depend on the type of configuration you wish to set up.

1. **Option 1 (module without HDCP function):**
   Connect up to four BNC cables to the four **Video 1** / **2** / **3** / **4** ports for:
   – HD / SD-SDI / NTSC / PAL video inputs or;
   – NTSC / PAL video inputs.
   Or
   Connect up to four VGA / DVI cables to the four **Computer/YPbPr 1** / **2** / **3** / **4** ports for VGA / DVI video inputs.

Option 2 (module with HDCP function):

Connect up to four BNC cables to the four **Video 1** / **2** / **3** / **4** ports for:

– HD / SD-SDI / NTSC / PAL video inputs or;

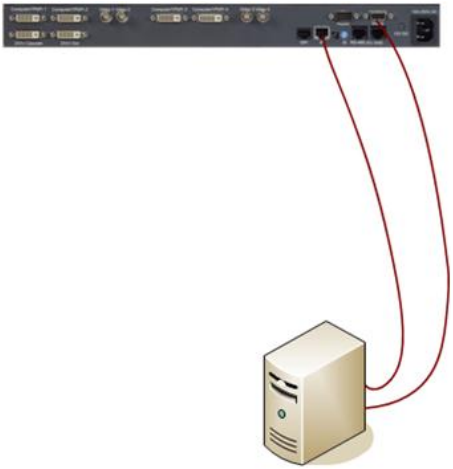
– NTSC / PAL video inputs.

Or

Connect up to four DVI / HDMI® cables to the four **Computer/YPbPr 1** / **2** / **3** / **4** ports for DVI / HDMI video inputs.

2. Connect the RS-232 cable to the **RS-232** port for signal from the computer.

   And / or, connect the Ethernet cable to the **IP** port for using the computer's Phoenix-G software to perform setup on the Titan.

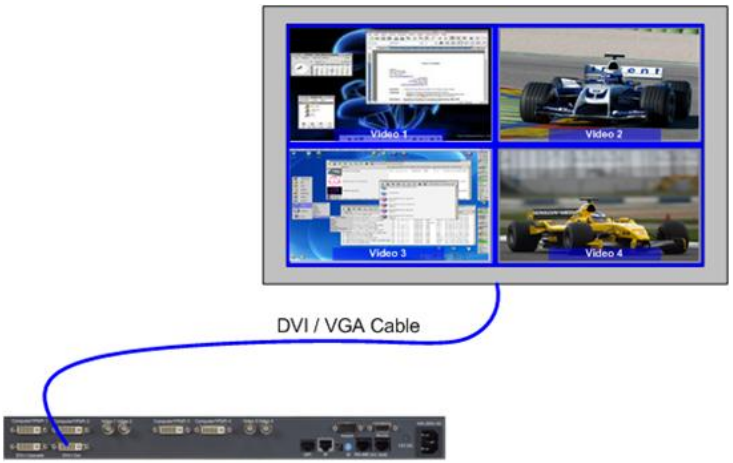


3. Connect the DVI-I cable to the **DVI-I Cascade** port for video input to the Titan.

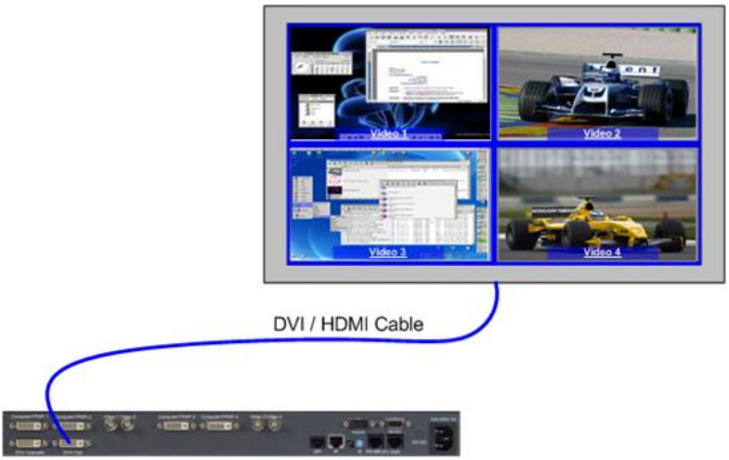
NOTE:

- Make sure that the resolution of the input source (as background image) is the same as the resolution of the **DVI-I Output** port for video output to the monitor display.
- When connecting to the computer with NVIDIA™ display card, use the DVI-to-VGA adapter that came with the NVIDIA™ display card instead of the included Avitech DVI-to-VGA adapter.
- HDCP-compliant content is not supported for **DVI-I Cascade** port of Titan.

4. **Option 1 (module without HDCP function):**
Connect the DVI / VGA cable to the **DVI-I Out**put port for video output to the monitor display (you may need to use a DVI-to-VGA adapter for monitor display with VGA input).



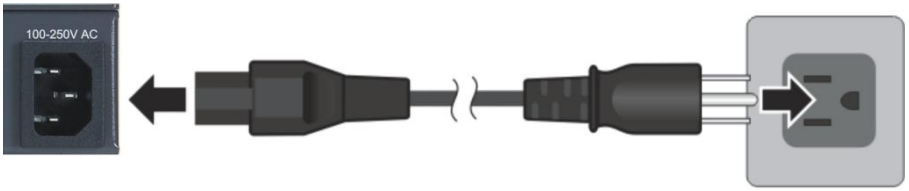
Option 2 (module with HDCP function):
Connect the DVI / HDMI cable to the **DVI-I Out**put port for video output to the monitor display (you may need to use a DVI-to-HDMI adapter for monitor display with HDMI input).



NOTE:
- To display HDCP-compliant content, make sure that the monitor display is also HDCP-compliant.
- Display of HDCP-compliant content is not possible when using a DVI-VGA Y-cable.

5. Make sure to assign a unique address to your Titan **ID** rotary dial when connecting to systems with two or more units.

6. Connect the AC power cord to the **100-250V AC** power jack.



Connect the optional 12 V DC power adapter if available to achieve power redundancy. Then, power (AC or DC) can be unplugged without affecting the power supply to the module.

Cascading

Cascading is the technique of "daisy-chaining" multiple modules through a DVI display and a digital control backbone. This connection allows the combined modules to operate as a single integrated system. Up to eight different modules can be combined in this fashion to create extremely large and complex systems with the ability to simultaneously monitor audio, video, and computer signals on the same display. If a module should fail, the control and video information is passed through to allow the continued operation of the system.

Cascading Two or More Titan

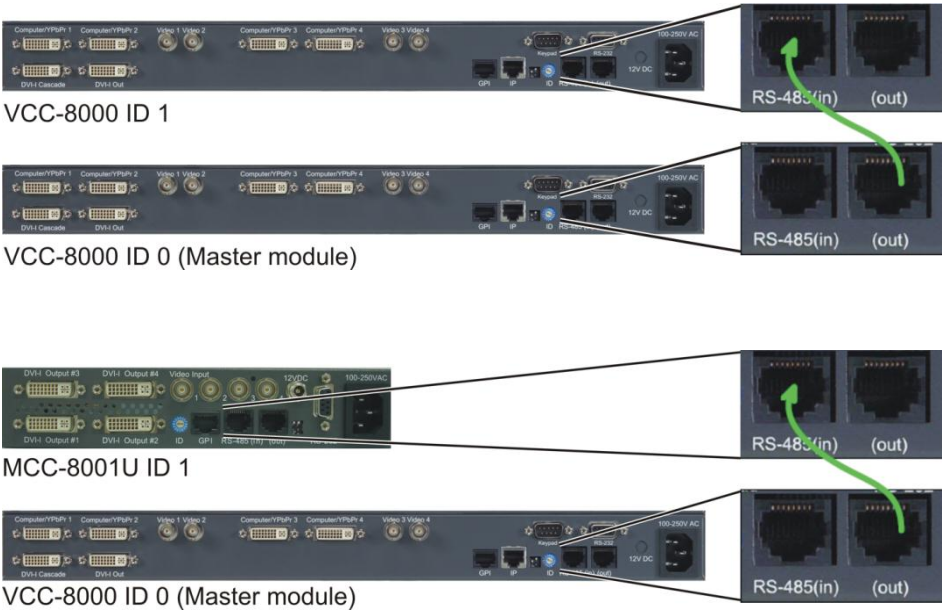
> **IMPORTANT:** When cascading multiple Titans with and without HDCP function, make sure to connect the Titan(s) with HDCP function together in sequence and the Titan(s) without HDCP function connected together in sequence. The Titan with HDCP function must be the last module that connects to the monitor display. This is necessary for outputting video with HDCP-compliant content.

To cascade two or more Avitech Titan, perform the following steps:

1. Set the rotary **ID** on the first Avitech Titan to **0** and set the rotary **ID** on the second Avitech Titan to **1**, and so forth (can be other values as long as both are different from each other's setting).

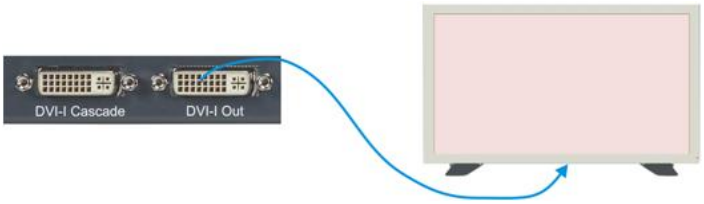
2. To display video overlay from each module, all units must be connected to each other via male-to-male short DVI cascading cable. Take a DVI cascading cable and connect one end to the **DVI-I Out** port on the Master (first) module (N), and the other end to the **DVI-I Cascade** port of the next module in the chain (N+1).

3. Module interface is cascaded through RJ-45 (RS-485) which is used to loop communication from one module to the next. The data stream carries control and configuration information. Take the RS-485 cascading cable and connect one end to the **RS-485 (out)** of the Master (first) module (N) and the other end to **RS-485 (in)** of the next module up (N+1). Refer to the sample module combination as follows:



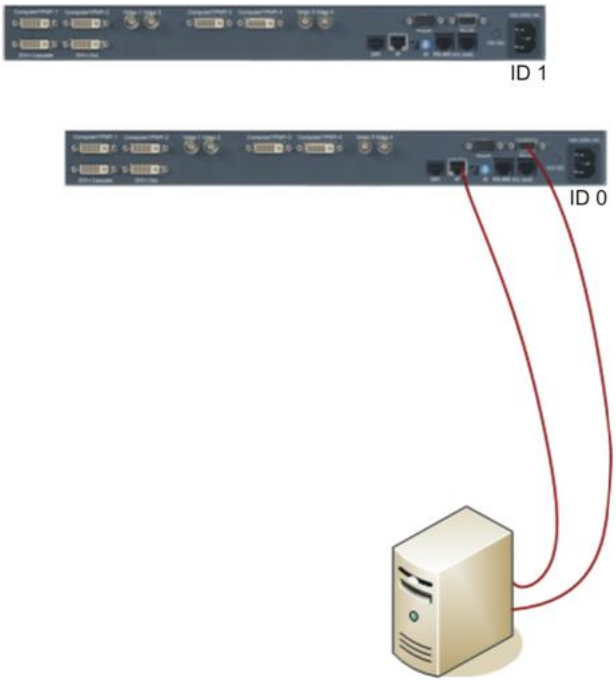
4. **Option 1 (module without HDCP function):**
The output from **DVI-I Out** port on the last module cascaded should go to the group output monitor display via single-link DVI / VGA cable (you may need to use a DVI-to-VGA adapter for monitor display with VGA input).

Option 2 (module with HDCP function):
The output from **DVI-I Out** port on the last module cascaded should go to the group output monitor display via single-link DVI / HDMI cable (you may need to use a DVI-to-HDMI adapter for monitor display with HDMI input).

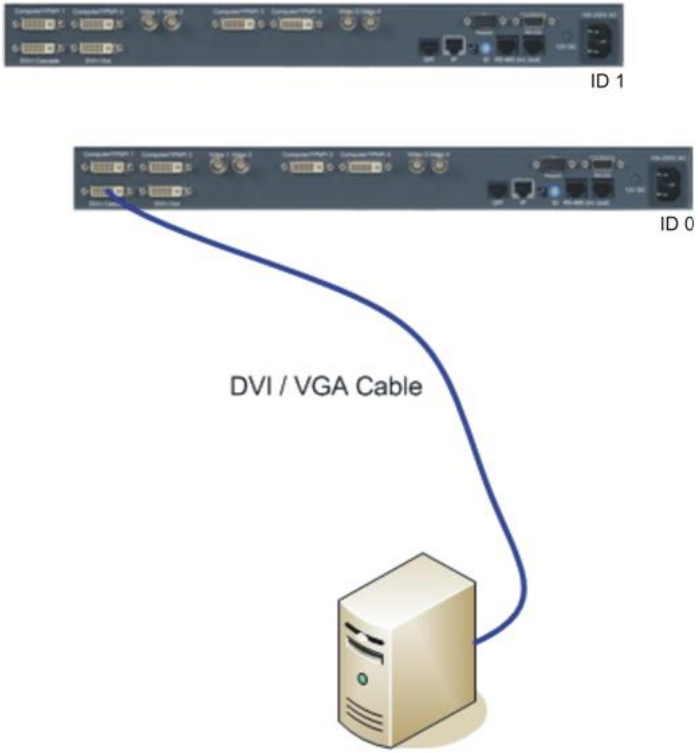


NOTE:
- When displaying non-HDCP-compliant content, the analog part of the **DVI-I Cascade** port is bypassed (relays) in case any of the cascaded modules has no power or is defective. A powered down or a defective unit in the chain **WILL NOT** compromise the whole system, other modules in the chain will display properly.
- To display HDCP-compliant content, make sure that the monitor display is also HDCP-compliant. A powered down or a defective unit in the chain **WILL** compromise the whole system causing the inability to display properly (HDCP encryption feature).
- Display of HDCP-compliant content is not possible when using a DVI-VGA Y-cable.

5. Connect one end of the RS-232 cable to the computer's RS-232 port and the other end to the **RS-232** port of Titan ID 0 (Master module).
   Or, connect the Ethernet cable between the Titan ID 0 (Master module) **IP** port to the computer's RJ-45 port.



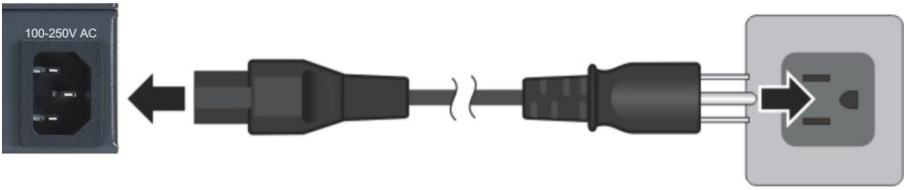
6. If the computer application uses multimedia input, connect one end of the DVI / VGA cable to the computer's DVI port and the other end to the **DVI-I Cascade** port of Titan ID 0 (you may need to use a DVI-to-VGA adapter).



NOTE:

- Make sure that the resolution of the input source (as background image) is the same as the resolution of the **DVI-I Output** port for video output to the monitor display.
- When connecting to the computer with NVIDIA™ display card, use the DVI-to-VGA adapter that came with the NVIDIA™ display card instead of the included Avitech DVI-to-VGA adapter.
- HDCP-compliant content is not supported for **DVI-I Cascade** port of Titan.

7. Connect the power cables to the Avitech multiviewer modules and make sure that power is available.



Connect the optional 12 V DC power adapter if available to achieve power redundancy. Then, power (AC or DC) can be unplugged without affecting the power supply to the module.

Cascading a Titan With a MCC-8004

IMPORTANT:

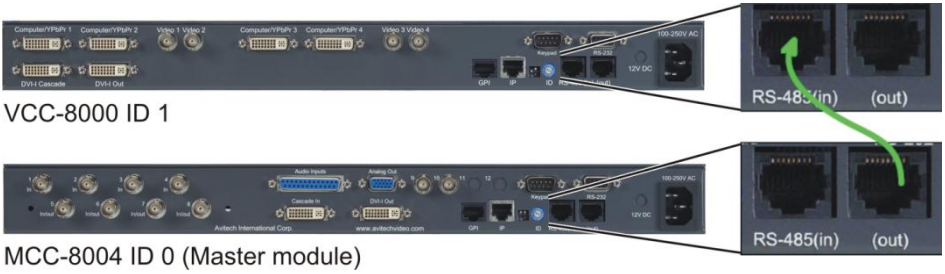
- Cascading the Titan with HDCP function and MCC-8004 is not allowed.
  This is because the MCC-8004 does not support outputting video with HDCP-compliant content.
- Cascading the Titan without HDCP function and MCC-8004 is allowed.
  When cascading multiple Titans without HDCP function with MCC-8004s, make sure to connect the Titan(s) without HDCP function together in sequence and the MCC-8004(s) connected together in sequence. The Titan without HDCP function must be the last module that connects to the monitor display.
- Make sure to set the same baud rate for the MCC-8004 and Titan (refer to the later sections for setting the baud rate).

To cascade a MCC-8004 with a Titan, perform the following steps:

1. Set the rotary **ID** on the MCC-8004 to **0** and set the rotary **ID** on the Titan to **1** (can be other values as long as both are different from each other's setting).

2. Connect one end of DVI cable to the **DVI-I Out** port of MCC-8004 ID 0 and the other end to the **DVI-I Cascade** port of Titan ID 1.

3. Connect one end of the RS-485 cable to the **RS-485 (out)** port of MCC-8004 ID 0 and the other end to the **RS-485 (in)** port of Titan ID1.



4. Connect one end of the DVI / VGA cable to the **DVI-I Out** port of Titan ID 1 (must be without support for HDCP function) and the other end to the monitor display (you may need to use a DVI-to-VGA adapter for monitor display with VGA input).

VCC-8000 ID 1

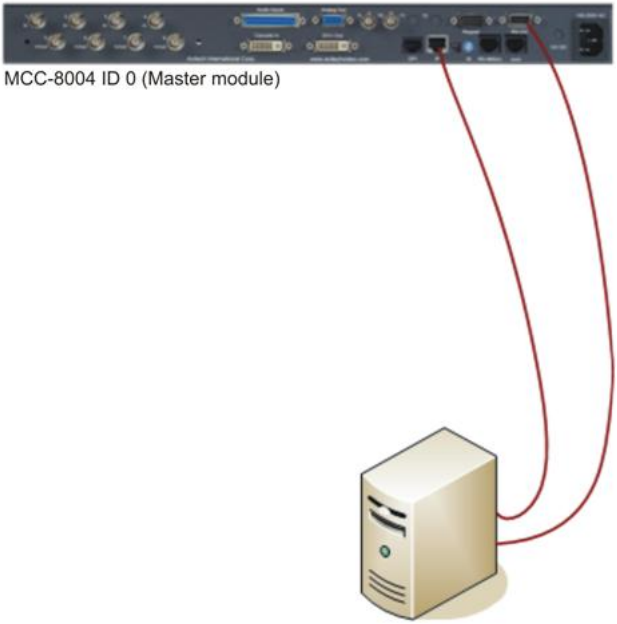
MCC-8004 ID 0 (Master module)

IMPORTANT:

- When cascading multiple MCC-8004s and Titans (without HDCP function), make sure to configure the Titan as the last module that connects to the monitor display.
- Do not use a DVI splitter to connect to the Titan module as well as output HDCP-compliant content to the monitor display.
- When displaying non-HDCP-compliant content, the analog part of the **DVI-I Cascade** port is bypassed (relays) in case any of the cascaded modules has no power or is defective. A powered down or a defective unit in the chain **WILL NOT** compromise the whole system, other modules in the chain will display properly.
- To display HDCP-compliant content, make sure that the monitor display is also HDCP-compliant. A powered down or a defective unit in the chain **WILL** compromise the whole system causing the inability to display properly (HDCP encryption feature).
- Display of HDCP-compliant content is not possible when using a DVI-VGA Y-cable.

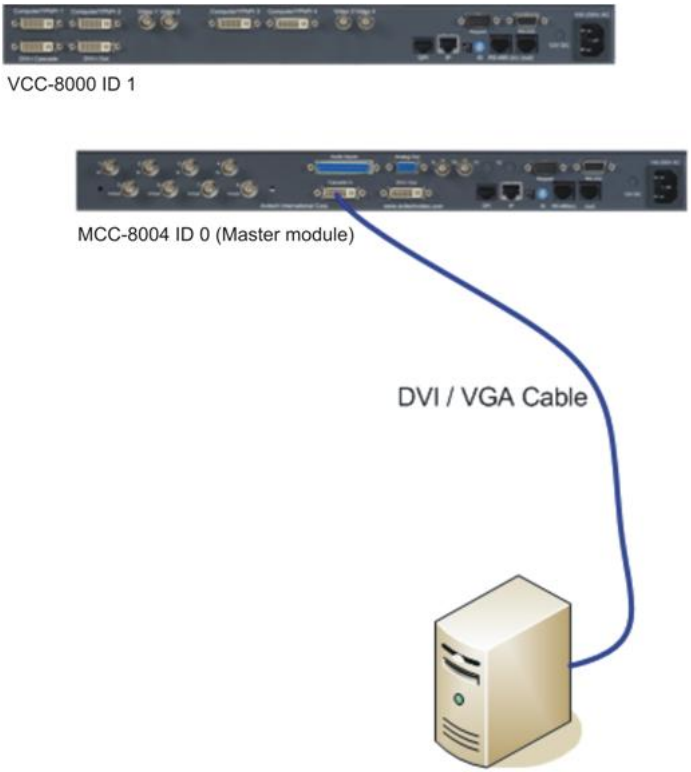
5. Connect one end of the RS-232 cable to the computer's RS-232 port and the other end to the **RS-232** port of MCC-8004 ID 0.
   Or, connect the Ethernet cable between the MCC-8004 ID 0 **IP** port to the computer's RJ-45 port.

VCC-8000 ID 1

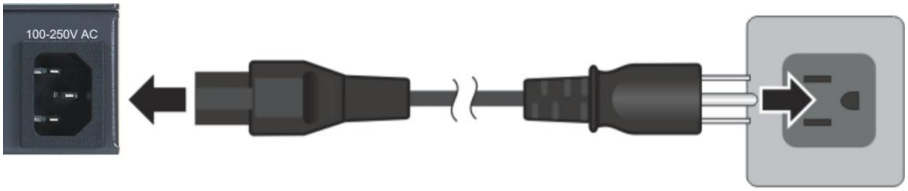


MCC-8004 ID 0 (Master module)

6. If the computer application uses multimedia input, connect one end of the DVI / VGA cable to the computer's DVI port and the other end to the **Cascade In** port of MCC-8004 ID 0 (you may need to use a DVI-to-VGA adapter).



7. Connect the power cables to the MCC-8004 and Titan and make sure that power is available.



1.6 Using the Phoenix-G Configuration Software

The Phoenix-G configuration software is designed for all Avitech multiviewer modules. This software requires no installation, and should not be run from a "read-only" device, such as an optical disc. This section introduces the Phoenix-G software for setting up your system.

> **NOTE:** Make sure the Titan is powered on and connected properly to your computer (see previous section) before launching the Phoenix-G software.

Connection Methods

There are two ways your Titan can connect to the controlling computer:

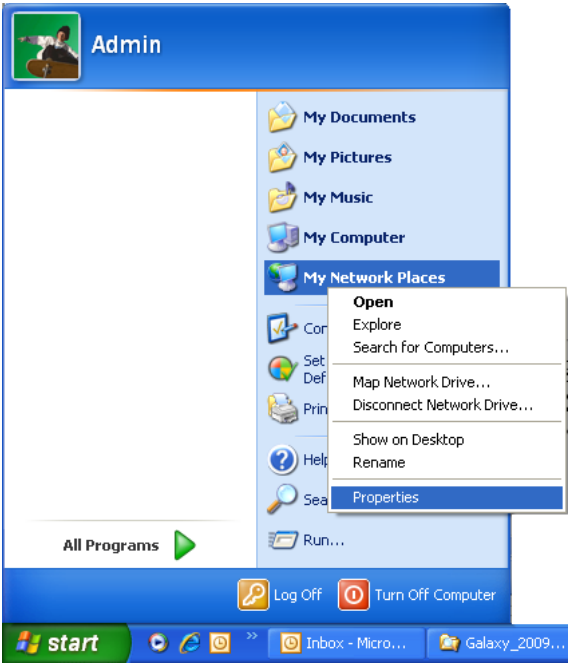
- Use the network cable (IP address) to connect (refer to the next section "Setting Up Static IP").
- Use the serial cable to connect (refer to a later section "Setting Up COM Port").

Setting Up Static IP

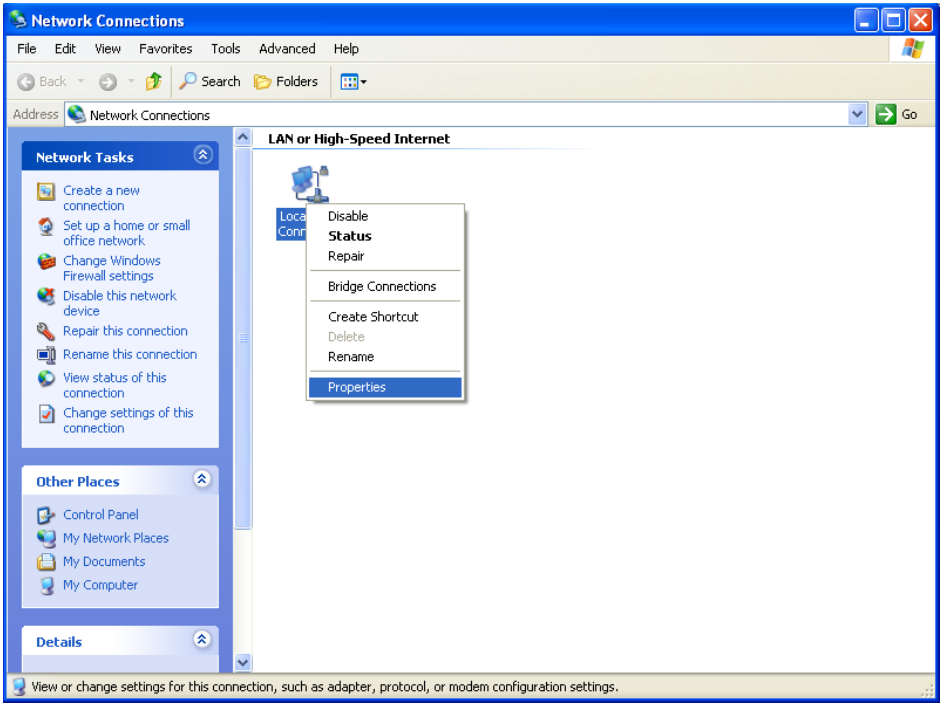
Before connecting the computers / controllers network to the Titan modules, computers with DHCP LAN connection will need to be changed to static IP, similar range as the Avitech Titan modules (e.g., "210.100.100.151" – factory-default setting). Or, change the IP address of the Titan Master module, similar range as the controlling computer.

Method 1: Change the IP Address of the Controlling Computer

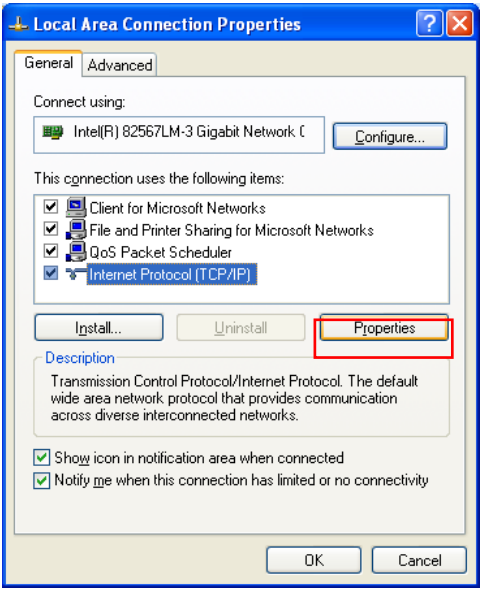
1. On your computer, click **Start**, and then right-click the mouse on **My Network Places**, and click **Properties**.



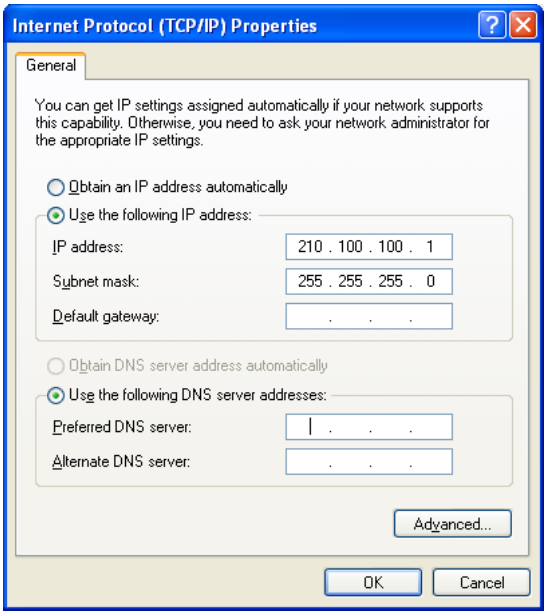
2. When the next screen appears, right-click the **Local Area Connection** icon, and click **Properties**.



3. When the next screen appears, click to highlight **Internet Protocol (TCP/IP)**, and click **Properties**.



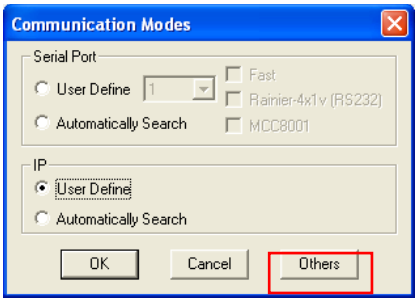
4. When the next screen appears, click the radio button to select **Use the following IP address:**, and then enter the **IP address: 210 . 100 . 100 . x** (where **x** is any value from **1** – **253**), and **Subnet mask: 255 . 255 . 255 0**.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
210 . 100 . 100 . 1
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

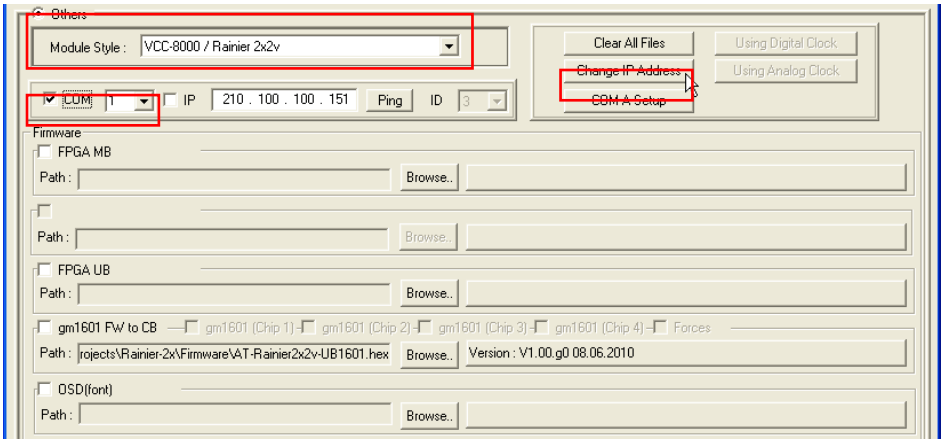
5. Click **OK** to exit.

Method 2: Change the IP Address of the Titan Master Module

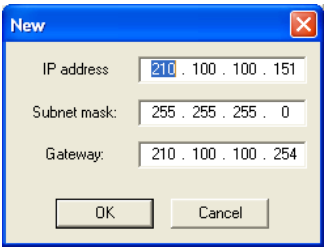
1. Run the Phoenix-G software by double-clicking the "Phoenix-G-V31x.exe" file (located in the included utility disc). When the following screen appears, click **Others**.



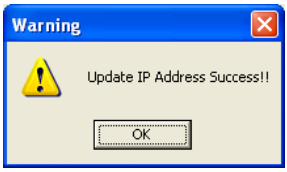
2. When the following screen appears, click to select the **Others** radio button, and on the **Module Style** drop-down menu select **VCC-8000** (Titan). Then, select **COM 1** (must be the same as the COM port setting of your computer).



3. Click **Change IP Address**. When the following screen appears, enter the new **IP address**, **Subnet mask**, and **Gateway**, to match the value of the controlling computer. Then, click **OK**.



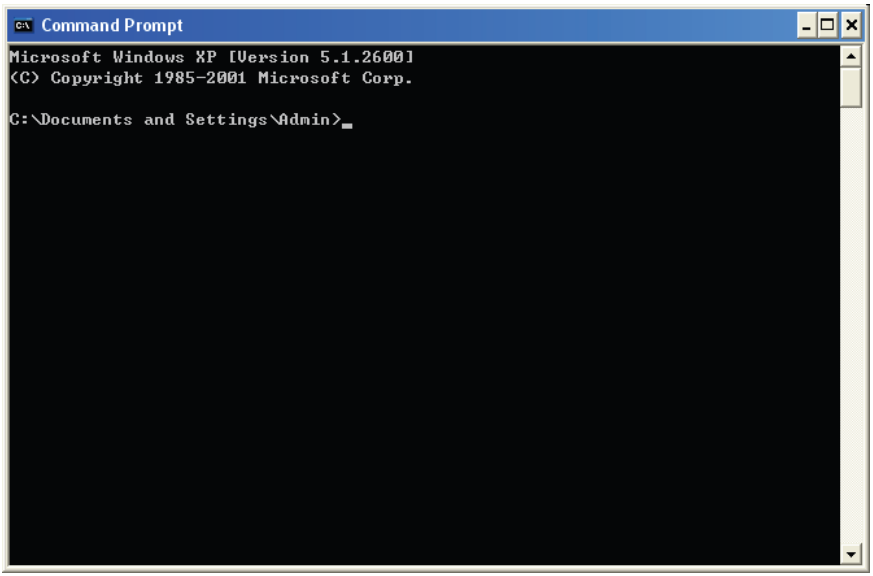
4. Click **Update** on the lower left portion of the **Update BIOS** window. When the following screen appears, click **OK**. Then click **Cancel** on the lower right portion of the **Update BIOS** window to exit.



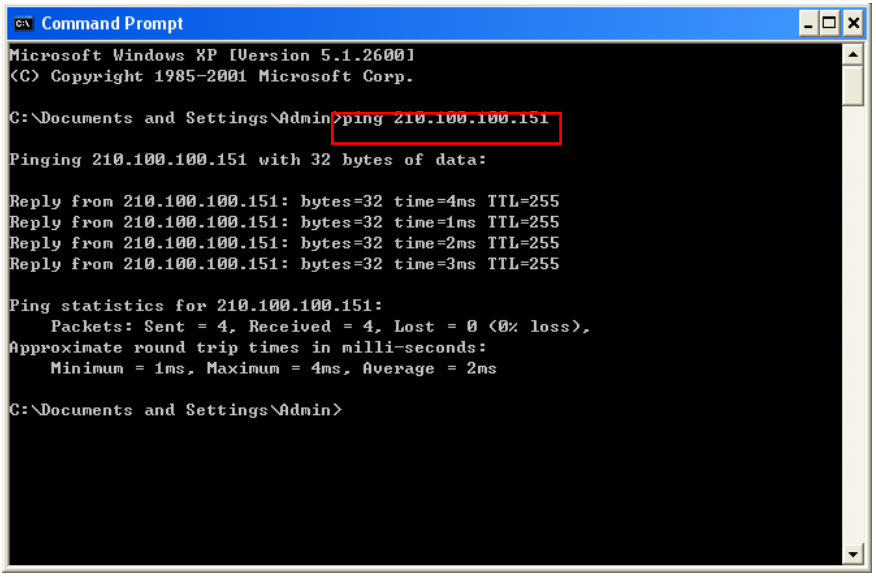
Pinging the Titan Module

If you decide to use the network cable to connect, make sure you can ping the module at “210.100.100.151” (factory-default IP address), by performing the following steps:

1. Click **Start→All Programs→Accessories→Command Prompt**. The following screen appears.



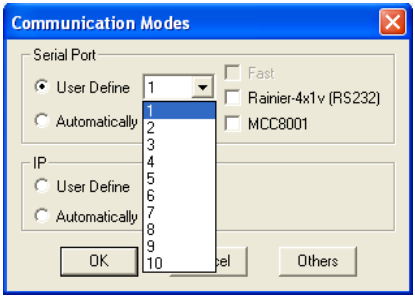
2. Type “ping 210.100.100.151” and the following screen appears to signify a successful communication.


Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\Admin>ping 210.100.100.151
Pinging 210.100.100.151 with 32 bytes of data:
Reply from 210.100.100.151: bytes=32 time=4ms TTL=255
Reply from 210.100.100.151: bytes=32 time=1ms TTL=255
Reply from 210.100.100.151: bytes=32 time=2ms TTL=255
Reply from 210.100.100.151: bytes=32 time=3ms TTL=255
Ping statistics for 210.100.100.151:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 4ms, Average = 2ms
C:\Documents and Settings\Admin>

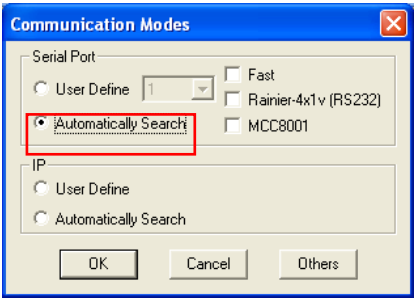
3. Type “exit” to exit the **Command Prompt** screen.

Setting Up COM Port

If you use the serial cable to connect, configure your computer’s COM port to be **1 – 10**. Upon starting up the Phoenix-G configuration software, make sure to specify the same COM port setting as your controlling computer.



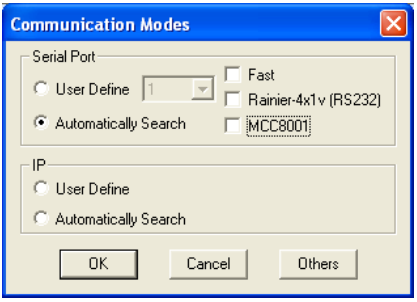
Or, click to select **Automatically Search** (may be slower on some systems).



Starting the Phoenix-G Configuration Software

To optimize the usage of your Avitech Titan, perform the following steps to configure it using the Phoenix-G software:

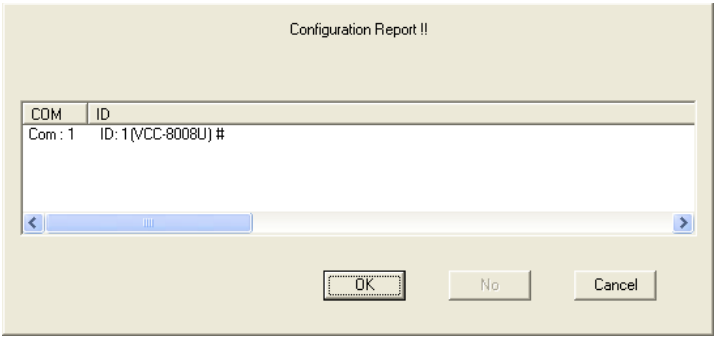
1. Run the Phoenix-G software by double-clicking the "Phoenix-G-V31x.exe" file. When the following screen appears, under **Serial Port** select **Automatically Search**. Or, under **IP** select **Automatically Search** if you know the IP address assigned to your Titan.



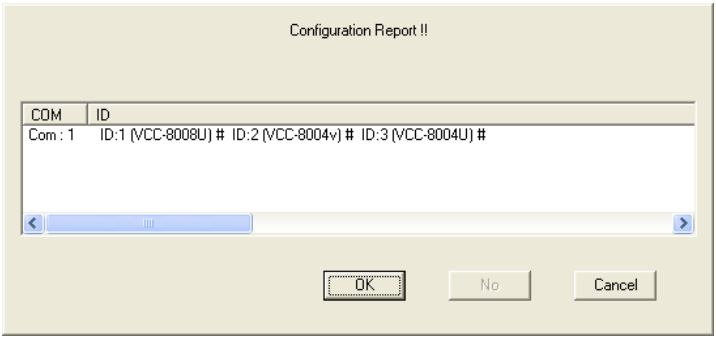
2. Click **OK** and your computer will start to search for your Titan.

> **NOTE:**
> - If you have two or more modules cascaded, they should also be detected.
> - Make sure that the slave module's baud rate and resolution is the same as the master module's baud rate.

3. Upon finding your device, the following screen will appear to confirm connection to your Titan.



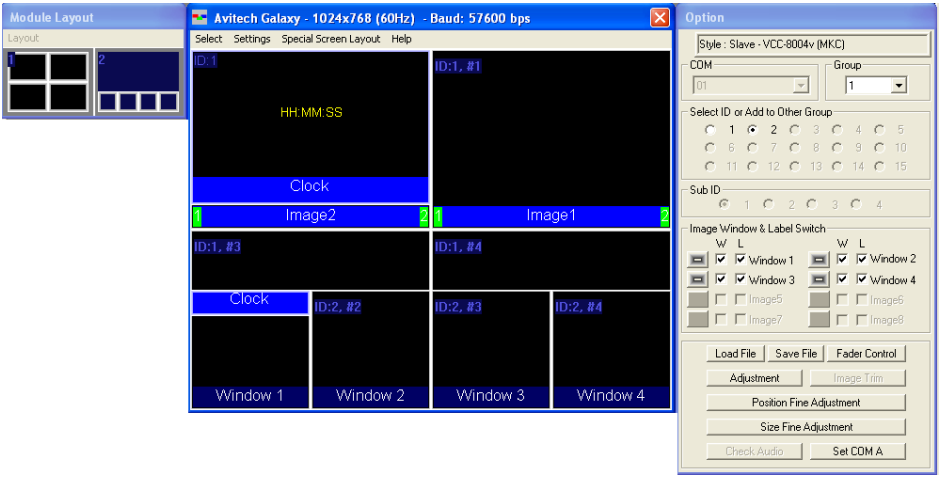
For standalone module



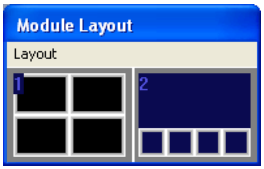
For cascaded modules

NOTE: Make sure the cascaded modules have different rotary ID settings (e.g., **1** – **2** – **3**) on their rear panels.

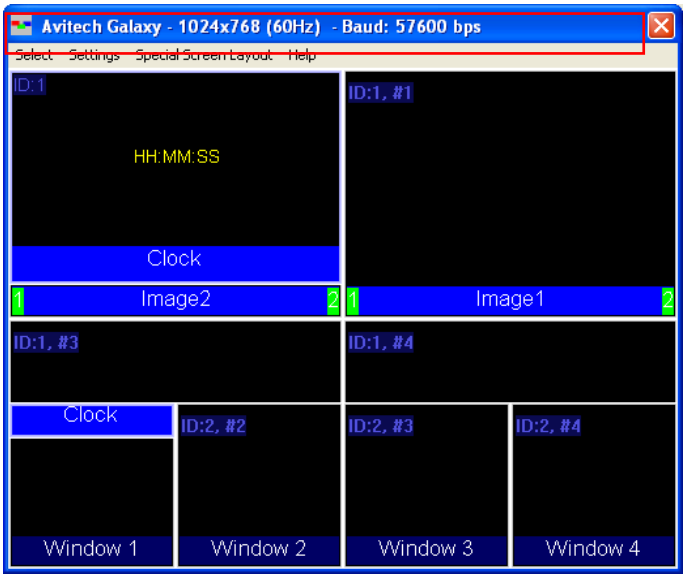
4. Click **OK** and the following screens appear: **Module Layout** window, **Phoenix-G** control window, and **Option** window.



- **Module Layout** window contains the bird's eye view of the module layout belonging to each ID in the system. In this example, the left window displays the layout belonging to ID:1 on the Phoenix-G control window; while the right window displays the layout belonging to ID:2.



- **Phoenix-G** control window is for creating and configuring the layout.

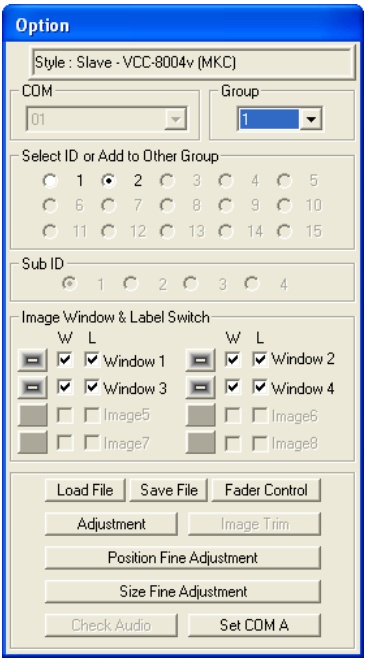


NOTE: When entering the Phoenix-G software for the first time, the layout for **ID: 2** may be covered by **ID: 1**.

On the title bar the following items can be found:

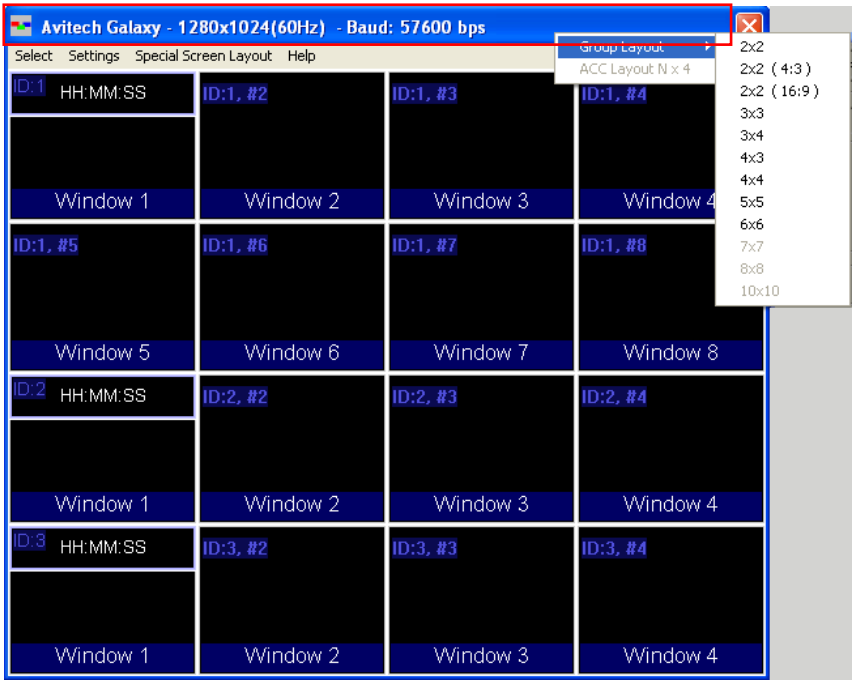
- *Logo icon* **Avitech Phoenix-G**: proprietary logo and the name of the software.
- **1024×768 (60Hz)**: shows the current output resolution and frequency.
- **Baud: 57600 bps**: shows the current COM port baud rate.

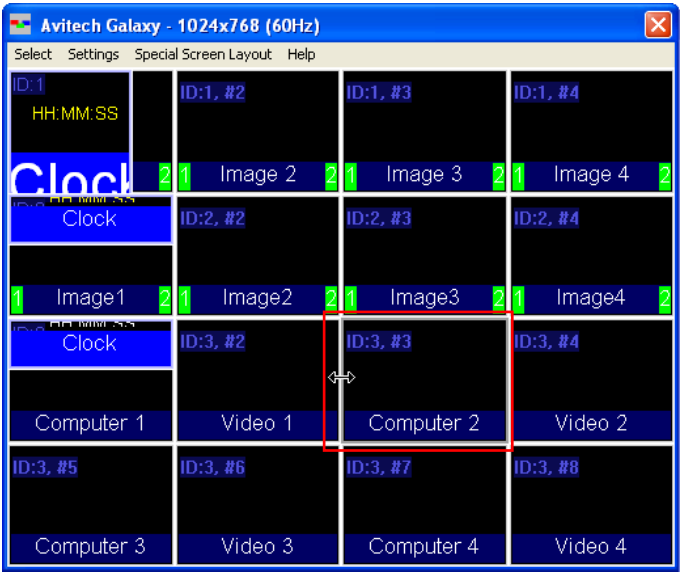
- **Option** window is for: group and window / label setup; save / load file; fader control; adjust image; window size / position; and COM port setting.



5. Right-click the mouse on the title bar to access the **Group Layout** menu. Select from **2×2** up to **10×10** as possible grid positions on the monitor display.

> **NOTE:** The layout size available for your particular model will depend on the monitor display's resolution as well as the smallest window size limitation (Titan smallest window size is 144×128 pixels).

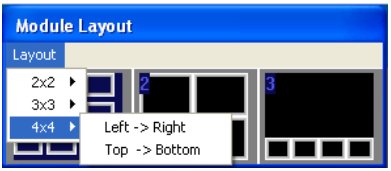




IMPORTANT: Upon enlarging / shrinking or changing the position of a particular window inside the Phoenix-G control window, a 1 / 2-pixel gap may be seen afterwards between the particular window and its neighboring windows appearing on the monitor display output. This is normal due to the difference in resolution setting of monitor display running the Phoenix-G program vis-à-vis the resolution setting of the monitor display output. It is most noticeable when the overall Phoenix-G control window is small.

Module Layout Window

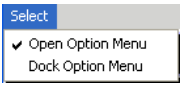
Layout Menu



Select from **2**×**2** up to **4**×**4** (left to right or top to bottom) as possible grid positions on the **Module Layout** window.

Phoenix-G Control Window

Select Menu



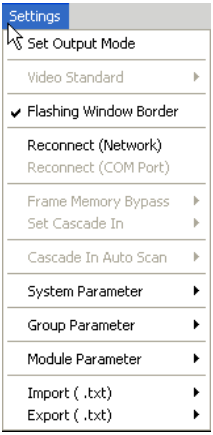
Open Option Menu

This toggles the **Option** window display on / off.

Dock Option Menu

This returns the **Option** window display to its default position on the right side of the Phoenix-G control window. This option is not available (grayed-out) if the previous item **Open Option Menu** is disabled.

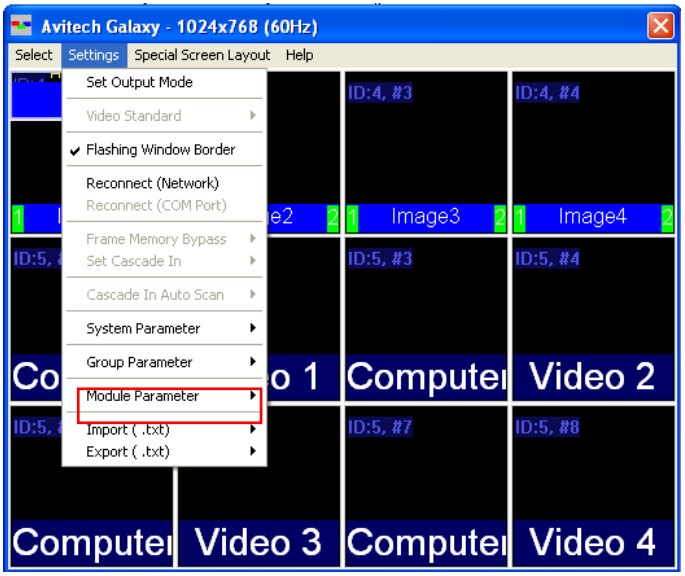
Settings Menu



Set Output Mode

By default, the Titan will automatically detect the optimum display resolution. When using the Titan for the first time or upon setting the device to the factory-default setting, automatic detection of optimum display resolution will only occur on the device that is connected to the monitor display. The rest of the cascaded devices will **still retain** their factory-default setting. Use the Phoenix-G software to disable this feature for an individual module, by performing the following steps:

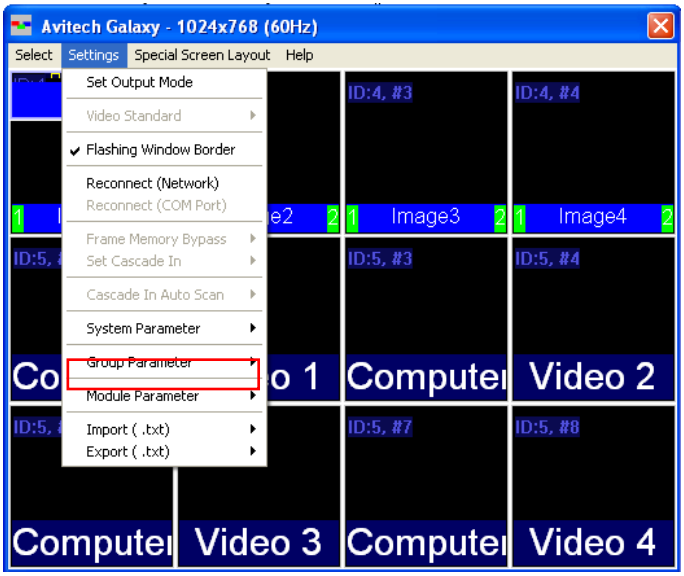
1. Click **Settings** then **Module Parameter**.



2. Click **Auto Parameter**. Then click to unselect (remove the checkmark) the **Detect Display Resolution** option.

Or, you can also perform the following steps for an entire Group:

1. Click **Settings** then **Group Parameter**.



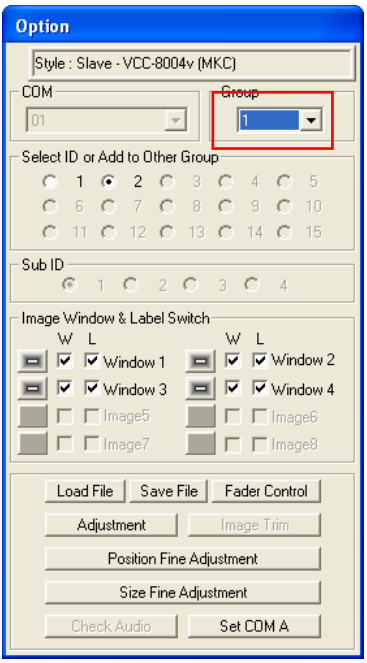
2. Click **Auto Parameter→Detect Display Resolution→Off**.

NOTE:

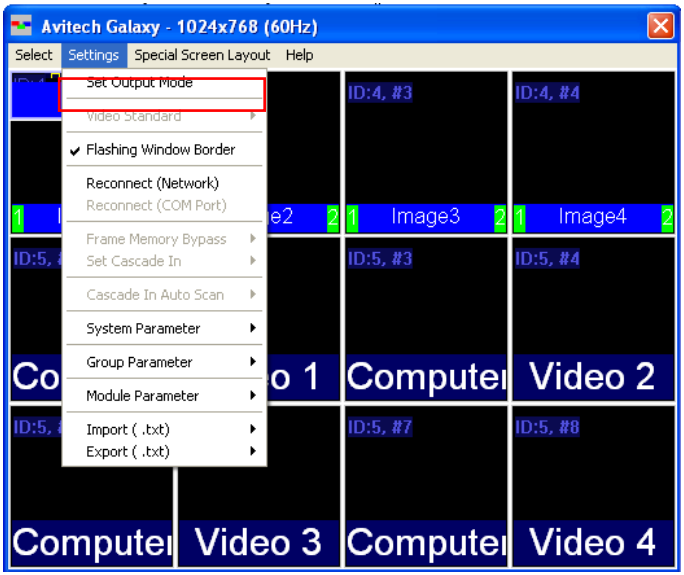
- When the monitor display is unable to provide the EDID signal, it will display at 1024×768 / 60 Hz. The extended display identification data (EDID) is a data structure provided by a computer display to describe its capabilities to a graphics card.
- When the **Detect Display Resolution** option is selected (with checkmark), all the presets will be displayed in the optimum resolution.
- When the **Detect Display Resolution** option is unselected (without checkmark) and you have set the desired resolution using the **Set Output Mode**, all the presets will be displayed in the desired resolution that you have set.

Setting the Desired Output Resolution

Changing the output resolution affects all the modules in the selected group. If you have more than one group, make sure you select the correct **Group** on the drop-down menu.

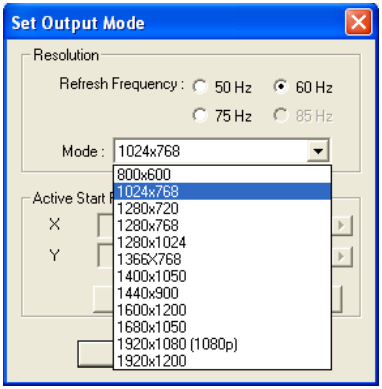


1. Click **Settings**, and then click **Set Output Mode**.



> **NOTE:** When the **Detect Display Resolution** option is on, the **Set Output Mode** function is not available (grayed-out).

2. When the following screen appears, set the output resolution to match the monitor display's resolution. Select the **Refresh Frequency**, select the **Mode** from the drop-down menu, and then click **OK**. You will notice that the selected resolution is displayed on the title bar of your Phoenix-G software.

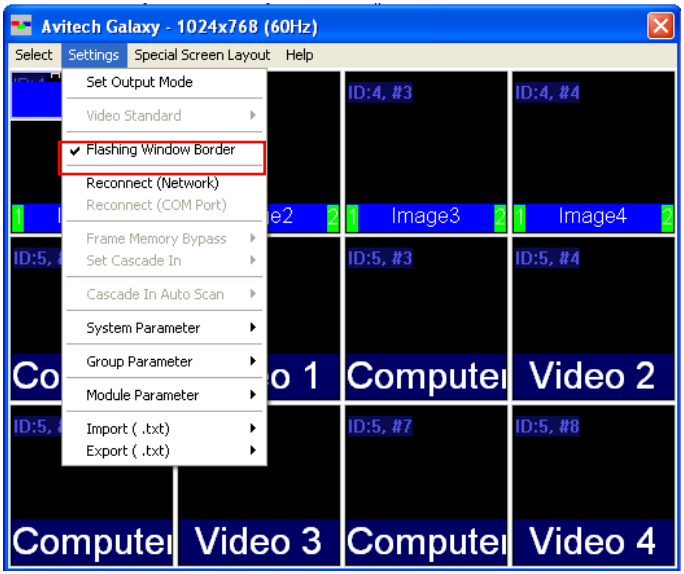


IMPORTANT:

- When the output resolution is set at 1360×768 / 1400×1050 / 1680×1050 and the display is set at the default 2×2 layout, misalignment will occur due to the software's automatic scaler feature. This is because a window on the monitor display increases / decreases by increments of 16 pixels horizontally, and the midpoint of the 1360×768 / 1400×1050 / 1680×1050 resolution is not divisible by 16 pixels. Oftentimes this also causes the rightmost portion of the monitor display to have a 16 pixel black curtain.
- Upon changing the output resolution, the output windows appearing on the monitor display may overlap or in the case of fixed window layout (e.g., 2×2, 3×3, 4×4, etc.) misalignment may occur. Choose a new window layout to fix this.

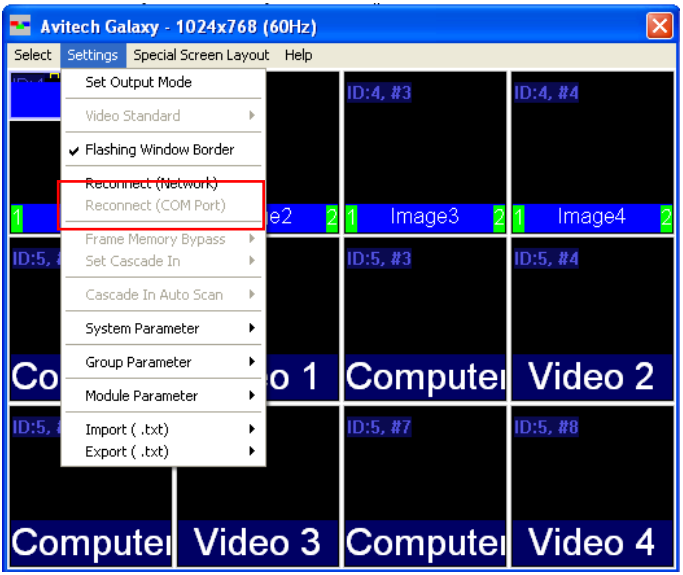
Flashing Window Border

When the **Flashing Window Border** option is enabled (with checkmark), the border of the window where the mouse cursor just resided will blink twice to notify you of its location.



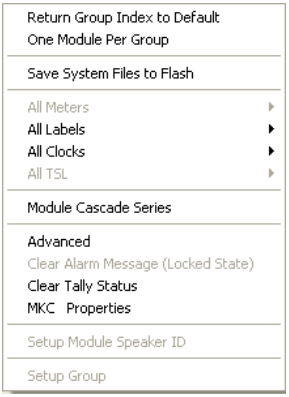
Reconnect (Network) / (COM Port)

When you have unplugged the IP cable and re-connected it, click **Reconnect (Network)** to continue the configuration process. Or, when using the serial cable, click **Reconnect (COM Port)** instead.



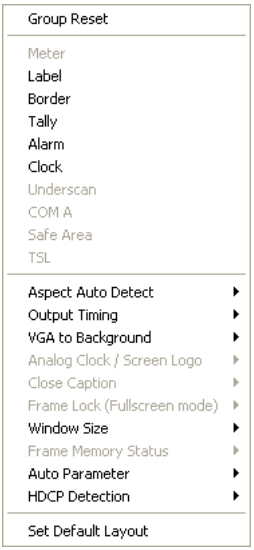
System Parameter

The following setup affects all the modules of all the groups. Upon clicking **System Parameter**, the menu appears as shown below.



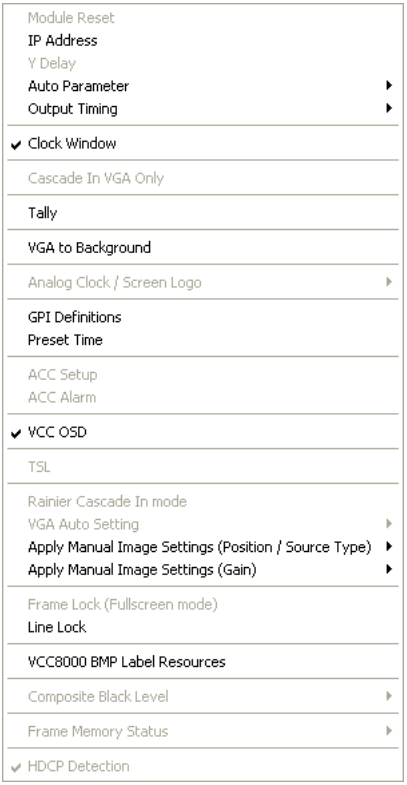
Group Parameter

The following setup affects all the modules in the selected group only. Upon clicking **Group Parameter**, the menu appears as shown below.



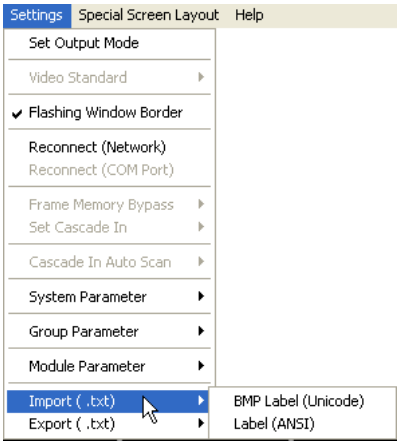
Module Parameter

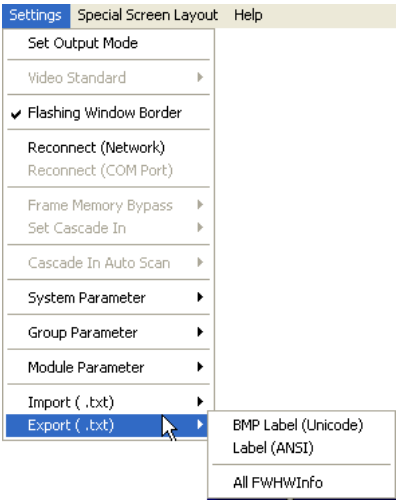
The following setup affects the selected module only. Upon clicking **Module Parameter**, the menu appears as shown below.



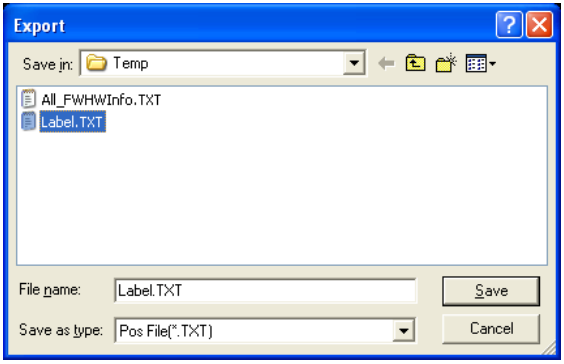
Importing / Exporting Label

This allows you to import label from / export label to Microsoft® Notepad to be edited externally.



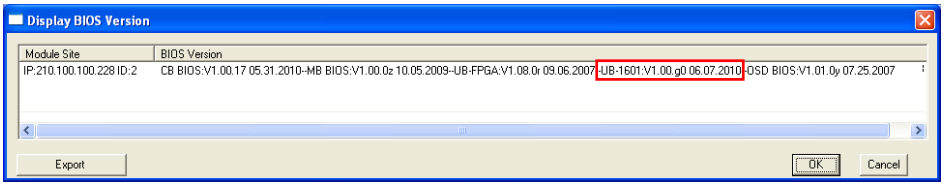


The most convenient way is to export the file (label) as a **BMP Label (Unicode)** or **Label (ANSI)** **`txt`** file by assigning a filename when the next screen appears.

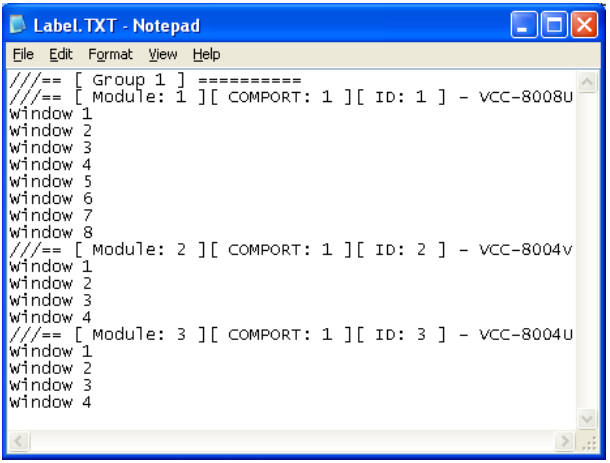


NOTE:

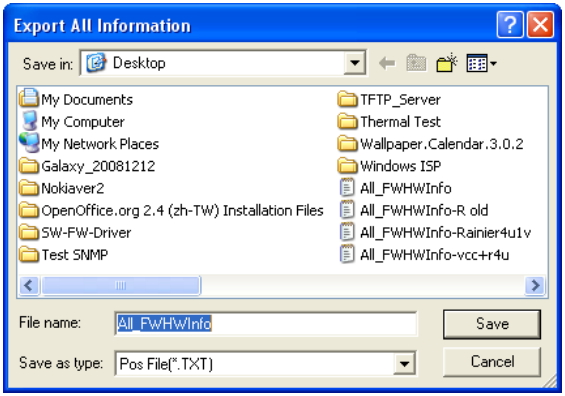
- The UB 1601 firmware version "**0t**" does not support the **BMP Label** function, only version "**g0**" supports the **BMP Label** function. To find out the UB 1601 firmware version, go to **Help→Read BIOS Version** and the following screen will appear. The middle portion of the highlighted text string should read "**g0**".
- The UB 1601 firmware with version "**0t**" cannot be changed to version "**g0**" and vice versa (hardware limitation).



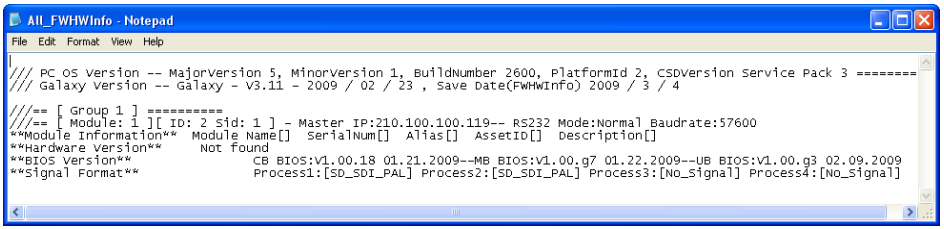
Using Microsoft® Notepad, edit the text in the file, starting with **Group 1** and **Module 1**. When you are done editing the label save the "txt" file and import it. The on screen labels will be updated.



To export all firmware / hardware information to a text file, click **Export (.txt)** and assign a filename when the next screen appears.



Click **Save**. The next screen shows the text file opened using **Notepad**.

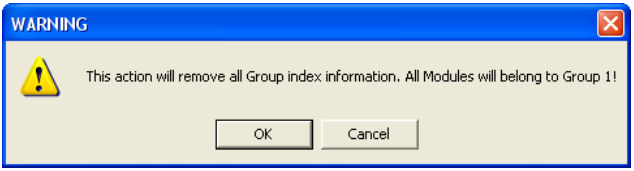

All_FWHWInfo - Notepad
File Edit Format View Help
/// PC OS Version -- MajorVersion 5, MinorVersion 1, BuildNumber 2600, PlatformId 2, CSDVersion Service Pack 3 ========
/// Galaxy Version -- Galaxy - V3.11 - 2009 / 02 / 23 , Save Date(FWHWInfo) 2009 / 3 / 4
///== [Group 1] ==========
///== [Module: 1][ID: 2 Sid: 1] - Master IP:210.100.100.119-- RS232 Mode:Normal Baudrate:57600
Module Information Module Name[] SerialNum[] Alias[] AssetID[] Description[]
Hardware Version Not found
BIOS Version CB BIOS:V1.00.18 01.21.2009--MB BIOS:V1.00.g7 01.22.2009--UB BIOS:V1.00.g3 02.09.2009
Signal Format Process1:[SD_SDI_PAL] Process2:[SD_SDI_PAL] Process3:[No_Signal] Process4:[No_Signal]

System Parameter

The following are the items appearing on **System Parameter**.

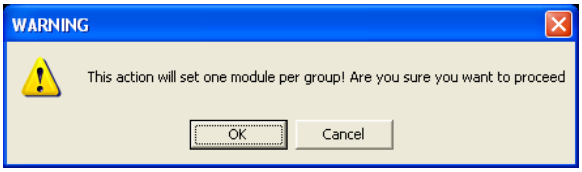
Return Group Index to Default

This allows you to return all groups to their default setting, as well as combine all modules into one group. Click **OK** when the next screen appears to complete the configuration change.

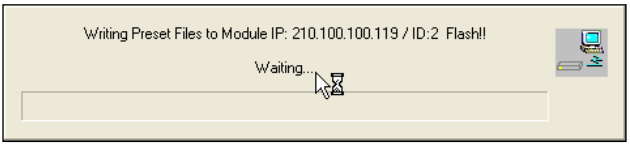


One Module Per Group

By default, the Phoenix-G software will combine all available modules into one large group. To quickly divide modules into different groups, each module can be treated as a group. For example, if cascading four modules, it will divide into four groups. When the next screen appears, click **OK** to finalize the changes.

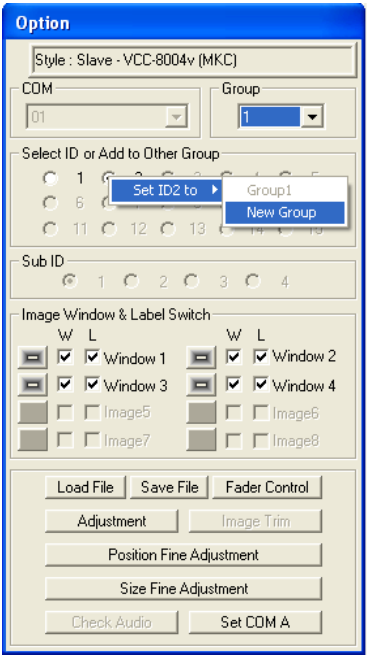


The configuration progress will be shown on the screen.



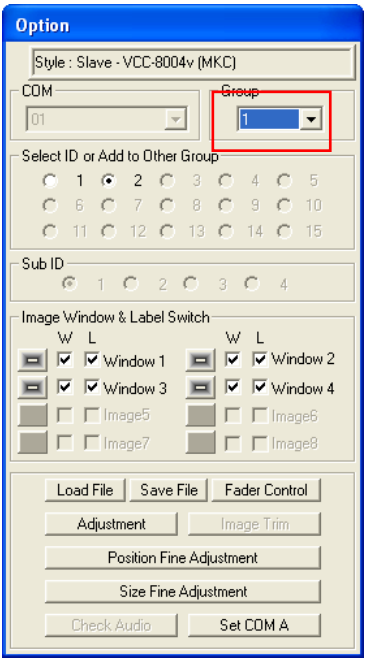
An alternative method for creating a new group is:

1. Right-click the mouse on the module you wish to add to the new group. Then click **Set ID# to→New Group**.



2. Repeat for all additional modules (you can either add additional modules to the new group or create additional groups).

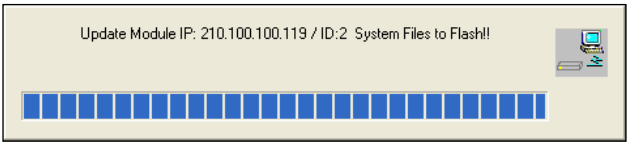
3. To switch between the different groups, use the **Group** drop-down menu.



4. Exit the Phoenix-G software and select **Yes** when prompted to save to flash memory.

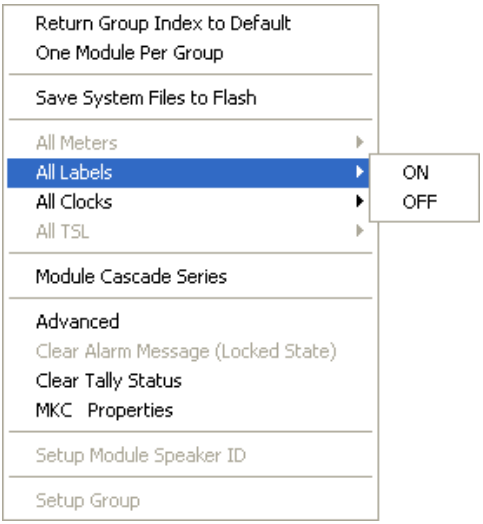
Save System Files to Flash

This allows you to save all configuration settings to flash memory. If the system configuration has been changed, save the changes first before continuing the other configuration settings. The progress of saving to flash memory will be displayed.



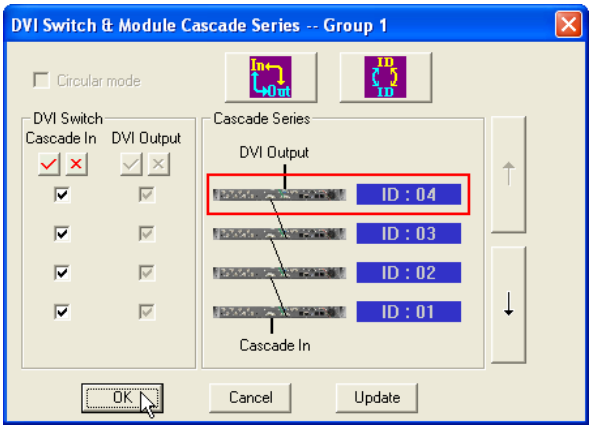
Turning On / Off All Labels / Clocks

To turn on / off all labels / clocks for all the modules, regardless of the group it belongs to, click **ON** / **OFF**.



Module Cascade Series

IMPORTANT: Do not use this function when the Titan is connected to the Avitech Sequoia Station-104/204 (mouse / keyboard controller).

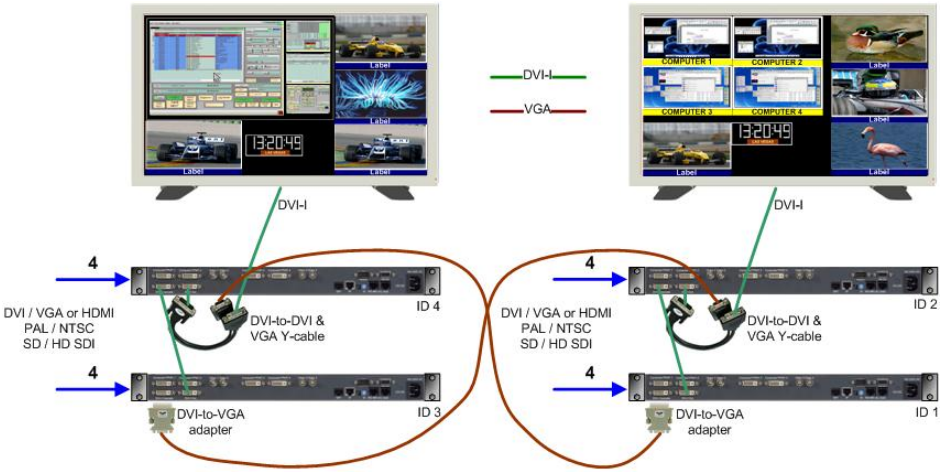


Use the **DVI Switch** function to enable or disable **Cascade In** for each ID number. Use the **Cascade Series** function to change the ID number designation only; this will not affect the actual physical connection of the Titan.

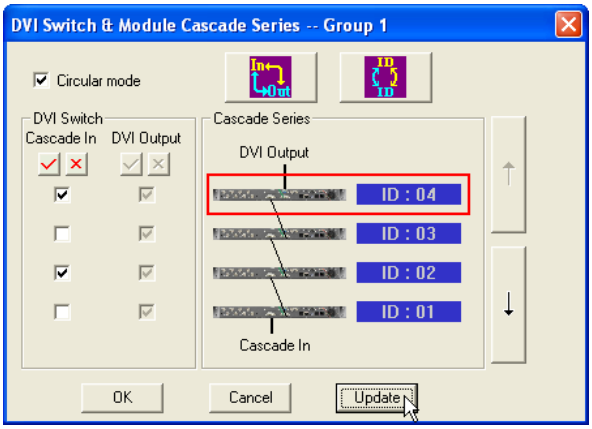
> **IMPORTANT:** Make sure the ID number designation on the **Cascade Series** section must match the actual physical connection of the cascaded Titan.

Example

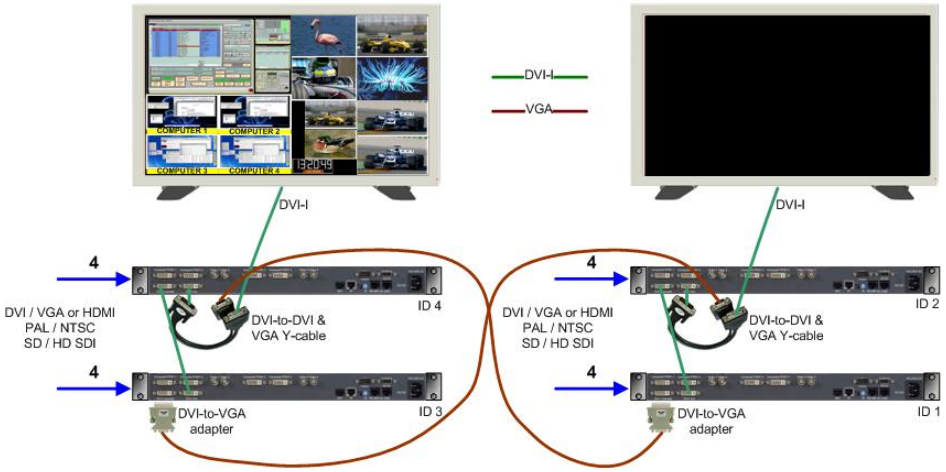
The DVI output of the last module of each group is feeding the monitor display. The VGA output of the last module of each group is also connected to the background input of the first module of the other group. During normal operation the input of the first module of each group is disabled (switched to default black background).



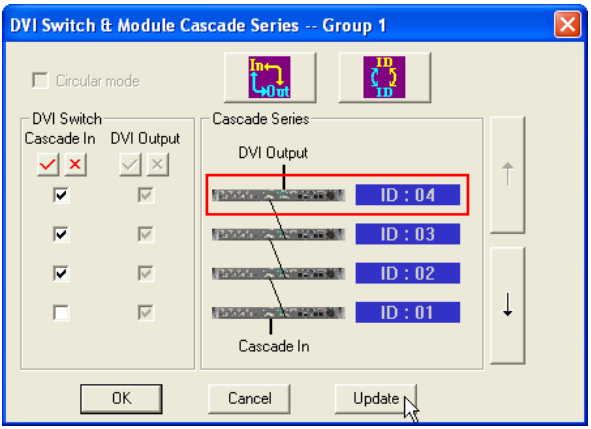
The following setting is shown to affect the above sample scenario. Take note that the **Circular Mode** item must be enabled.



In case one monitor display fails, a preset combining all the inputs of both groups can be recalled through the looping cable. In case the other monitor display fails, another preset addressing this situation can be recalled. The same concept can be extended to more than two groups.

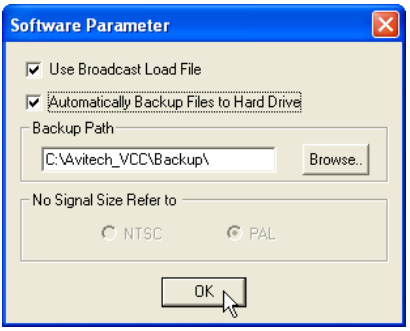


The following setting is shown to affect the above sample scenario.



Advanced

Upon clicking **Advanced**, the following screen appears:



- **Use Broadcast Load File**
  For loading presets / switching resolution / group reset. When this option is enabled (with checkmark), the Phoenix-G software will broadcast the command to every module, allowing for simultaneous execution of the command.

NOTE: This feature should always be enabled.

- **Automatically Backup Files to Hard Drive**
  When enabled (with checkmark), the Phoenix-G software will save all backup files to the computer hard drive's "c:\Avitech_VCC\Backup\" folder. You may change this by clicking **Browse** to select a different location to save the backup information.

- **No Signal Size Refer to**
  When the window is unable to detect a signal, this will serve as the basis for the Phoenix-G software to adjust the window size. **NTSC**: maximum window size is 816×465. **PAL**: maximum window size is 816×560.

Clear Tally Status

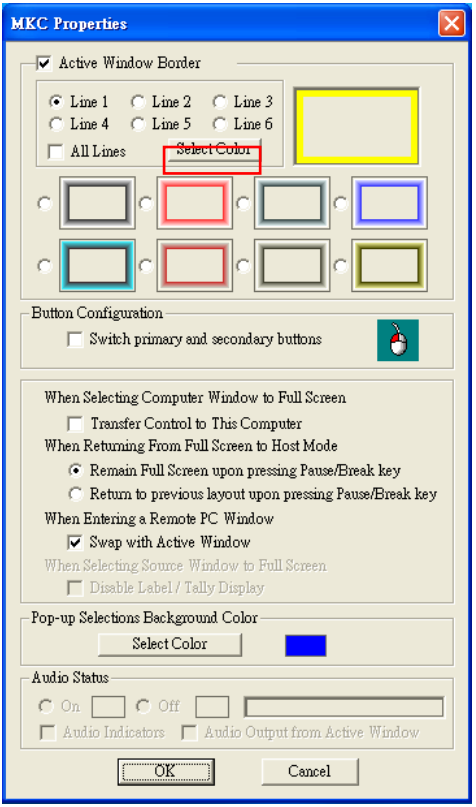
When running tally via RS-232, use this function in the Phoenix-G software to close it. Alternatively, use the ASCII Z command to close tally via RS-232.

MKC Properties

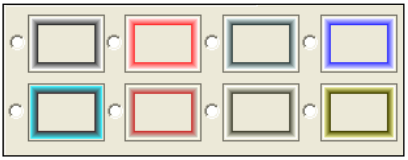
> **IMPORTANT:** You need to connect your Titan to the Sequoia Station-104/204 (mouse / keyboard controller module) for this function to take effect.

To set the various **MKC Properties** features, perform the following steps:

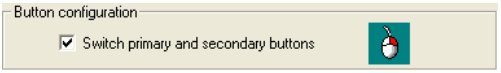
1. Upon clicking **MKC Properties**, the following window will appear. The **Active Window Border** feature allows you to set the border color of the active window. Each pixel / line can be a different color or set all lines to be the same color (**All Lines**) by clicking the radio button to select the **Line #**. Then click **Select Color** to choose the color.



There are eight options for choosing the 3D border. Click one of the 3D border's radio buttons to select it.



2. To swap the two mouse buttons so that you can use the right button as the left button, click the checkbox to enable **Switch primary and secondary buttons**.



3. If the item **Transfer Control to This Computer** is enabled (with checkmark), keyboard / mouse control will transfer to the particular window (computer) that has just entered full screen mode.

NOTE: Default setting is disabled (keyboard / mouse control does not transfer to a particular computer that enters full screen mode).

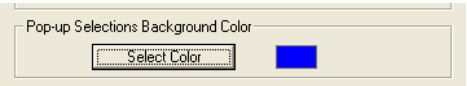
4. Click the radio button for **Remain Full Screen when pressing Pause/Break key** under the item **When Returning From Full Screen to Host Mode** if you wish the display to remain in full screen mode upon pressing the **Pause**/ **Break** key.

NOTE: Default setting is **Return to previous layout when pressing Pause/Break key**.

5. When the item **Swap with Active Window** is enabled (with checkmark) – the action of entering a computer window (other than the current active window) would cause both active and newly entered windows to swap position.

NOTE: Default setting is enabled for this item.

6. Click **Select Color** to change the background color of the pop-up selections (default color is dark blue).



7. Then click **OK** when finished and exit the **MKC Properties** window. The Phoenix-G software would still retain the settings until the next time you change the settings in the **MKC Properties** window or you return the system to the factory-default state.

Group Parameter

The following are the items appearing on **Group Parameter**.

Group Reset

This allows you to refresh all modules belonging to the same group.

Label

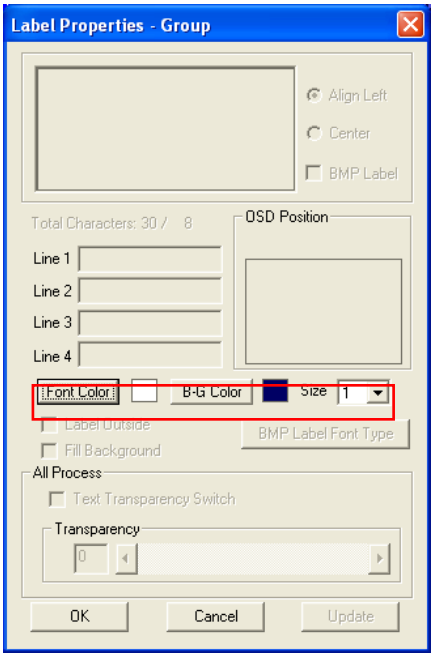
There are two hierarchies for setting the **Label** properties. One can affect the entire group, while the other affects a single window.

For an Entire Group

To set the label properties, perform the following steps:

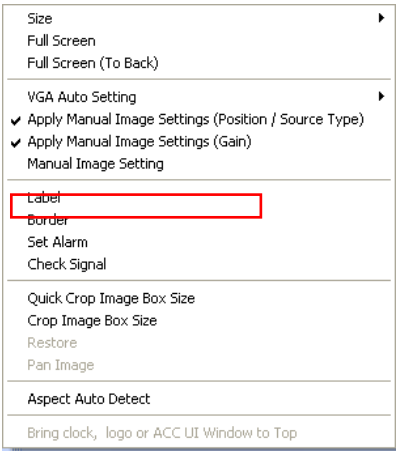
> **NOTE:** Make sure to turn on all labels (see previous section) before setting the label properties.

Select **Settings→Group Parameter→Label** to adjust the **Font Color**, **B-G** (background) **Color**, and font **Size** for all labels in the group.

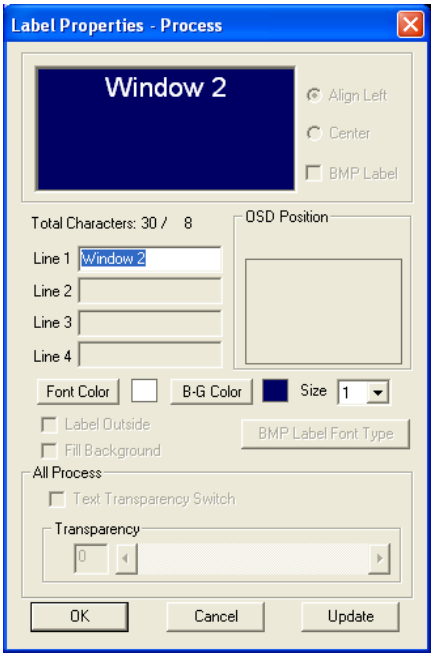


For an Individual Window

1. Right-click the mouse on a window and select **Label** to enter text.



2. Keep in mind that each window supports one line of text, up to 30 characters.

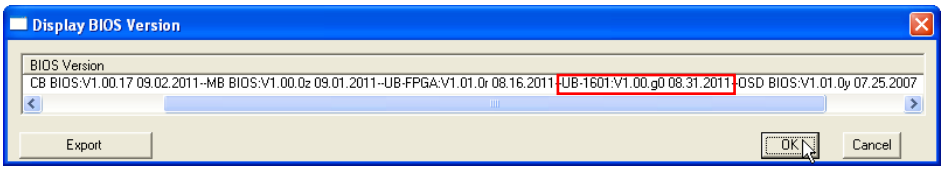


- **BMP Label**: allows you to activate the universal fonts for labels by performing the following steps:
  1. Click to enable the **BMP Label** checkbox (with checkmark).
  2. Click the **BMP Label Font Type** button.
  3. When the Font window appears, set the **Font**, **Font style**, and **Size**. Then click **OK**.
  4. On the **Line 1** window enter a label in the desired language by first selecting the language on the Windows taskbar.

  5. Repeat the above steps for all the other windows.

NOTE:

- The UB 1601 firmware version "**0t**" does not support the **BMP Label** function, only version "**g0**" supports the **BMP Label** function. To find out the UB 1601 firmware version, go to **Help→Read BIOS Version** and the following screen will appear. The middle portion of the highlighted text string should read "**g0**".
- The UB 1601 firmware with version "**0t**" cannot be changed to version "**g0**" and vice versa (hardware limitation).

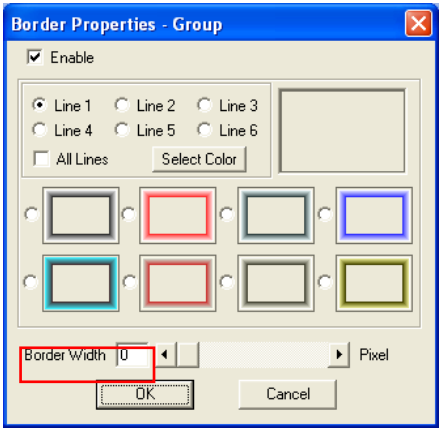


Setting Border Properties

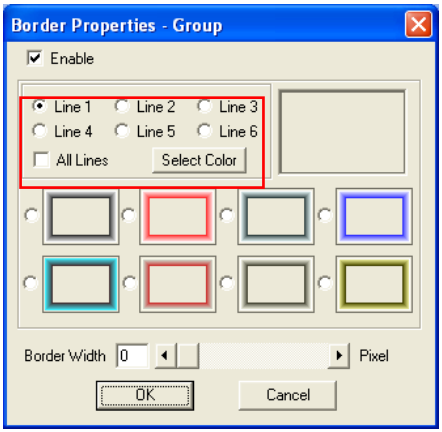
Borders are turned on by default. To turn off the border perform the following steps:

For an Entire Group

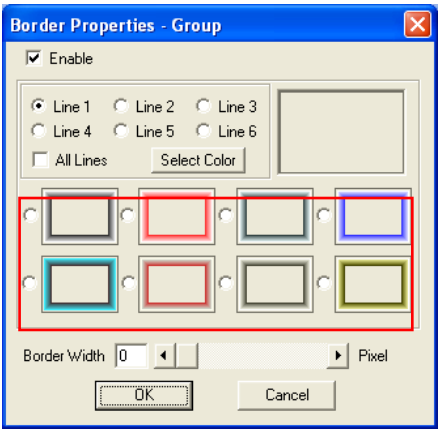
1. Select **Settings→Group Parameter→Border**, and then change the **Border Width** to **0**.



2. You can also change the border color.
   - Each pixel / line can be a different color



- 3D border



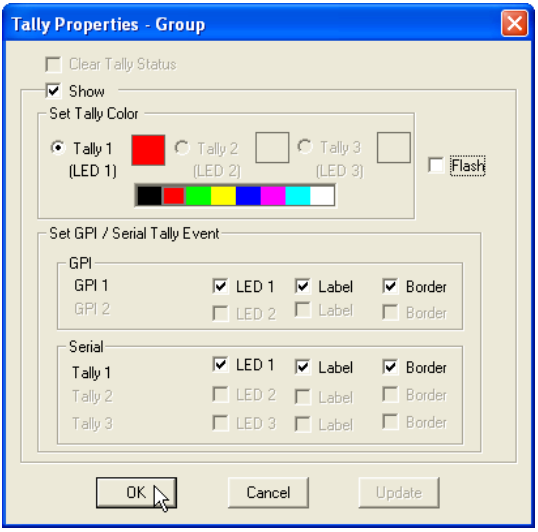
For an Individual Window

To change the border properties for an individual window, right-click the mouse on the window and select **Set Border**, then select the desired color and size.

Activating Tally

The RJ-50-to-GPI terminal block allows for a total of eight inputs to activate tally, two per window. You can also use the serial port with ASCII, TSI, or TSL to activate tally. To change the appearance of tally, perform the following steps:

1. Select **Settings→Group Parameter→Tally**. The following window appears:



Tally 1 is triggered by GPI.

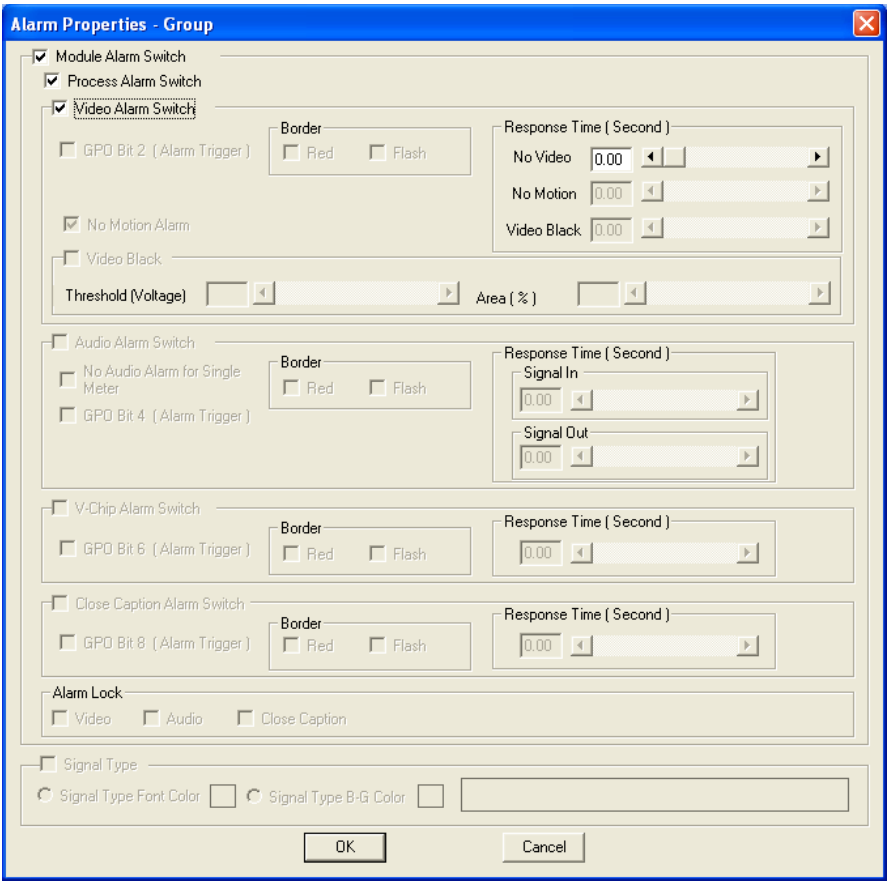
2. The settings that can be adjusted include **Tally Color**, **LED**, **Label**, **Border**, and **Flash.**

Activating Alarm

This allows you to setup the notification when a signal is missing.

For an Entire Group

To set the alarm properties, click **Alarm** and the following screen appears. By clicking **Module Alarm Switch**, you will set the **Process** / **Video Alarm Switch** for alarms in the group and **Response Time (Second)** when **No Video** occurs.



For an Individual Window

To set the alarm properties for an individual window, right-click the mouse on the window and select **Set Alarm**.

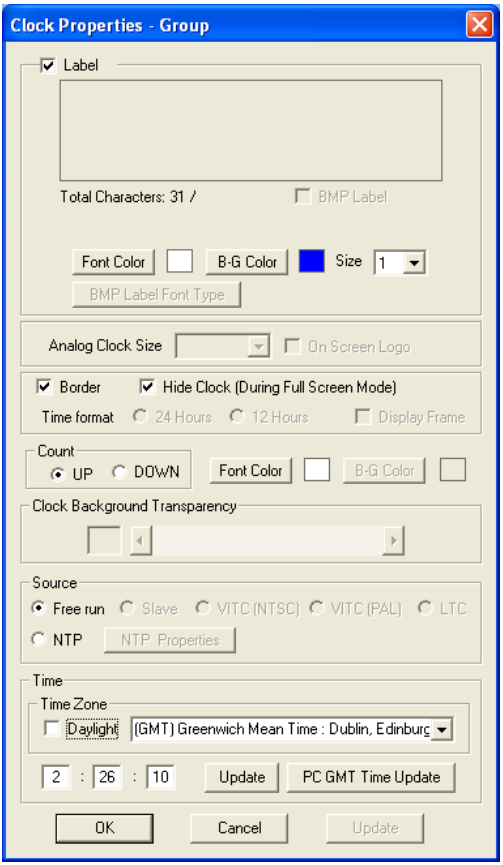
- **Module / Process Alarm Switch**: to turn on the alarm setting, make sure that both options are enabled (with checkmark).
- **Video Alarm Switch**: to turn on / off the "no video" signal.

- **Response Time (Second)**: to set the "no video" alarm response time from **0** to **23** seconds.

Setting Clock Properties

> **NOTE:** Make sure to turn on all clocks (see previous section) before setting the clock properties.

To set the clock properties, select **Settings→Group Parameter→Clock** to adjust the **Font Color**, **B-G** (background) **Color**, and font **Size** for all clocks in the group. You can also set the **Border**, **Hide Clock (Fullscreen mode)**, **Count** (**UP** / **DOWN**), **Source**, and **Time Zone**.



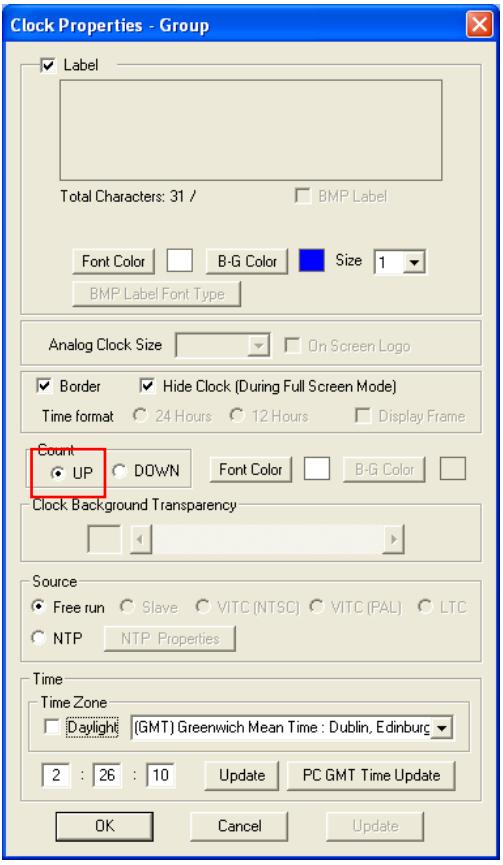
To activate the time code feature, on the **Source** portion click the mouse to select **Free Run**. Then click the **Update** button (on the lower right portion) and then click **OK**.

The **NTP** time code feature allows the Titan to synchronize the clock with an external NTP time server. The **IP** port on the rear of the Titan can control, as well as receive, time code information simultaneously.

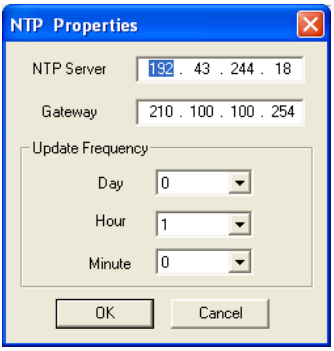
> **NOTE:** When cascading the Titan modules, each module's **IP** port must detect the NTP time code with an external NTP time server individually (no synchronization feature).

To set up the NTP time code, perform the following steps:

1. Make sure that **Count→Up** is selected.



2. On the **Source** portion click the mouse on **NTP** to select it. Then click the **NTP Properties** button; the following screen appears.



3. Enter the IP address of the **NTP Server**, the default **Gateway** (use "ipconfig" in Windows DOS mode to find out), then set the update frequency time interval.

4. Select the **Time Zone** in the drop-down menu and click the mouse on the **Daylight** checkbox to select DST (daylight saving time) when applicable.

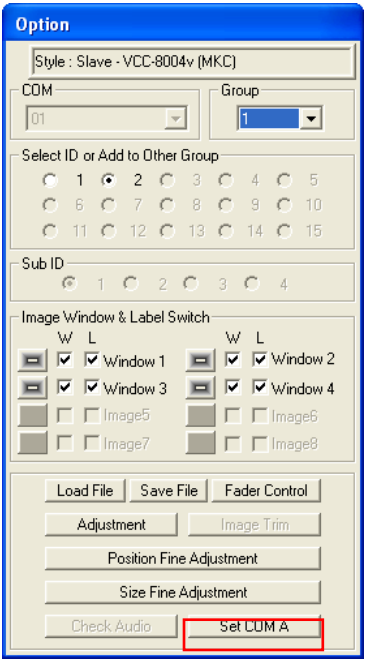
5. Click **Update** (on the lower middle portion) and then the **OK** button.

NOTE: You may be required to exit the Phoenix-G software by first saving the new settings to flash memory, then restarting the Phoenix-G software before the clock can be updated.

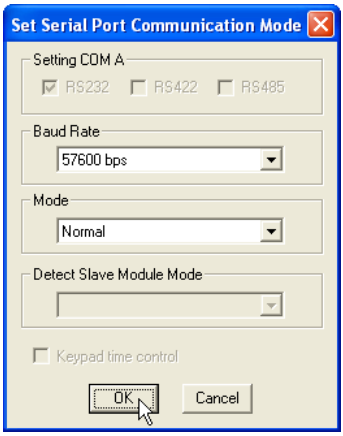
Setting COM Port

This allows you to configure the serial port of the module with the computer for configuration and control. To set the COM port, perform the following steps: (By default, the COM port is set to normal, and the baud rate is set to 57600 bps.)

1. On the **Option** window, click **Set COM A**.



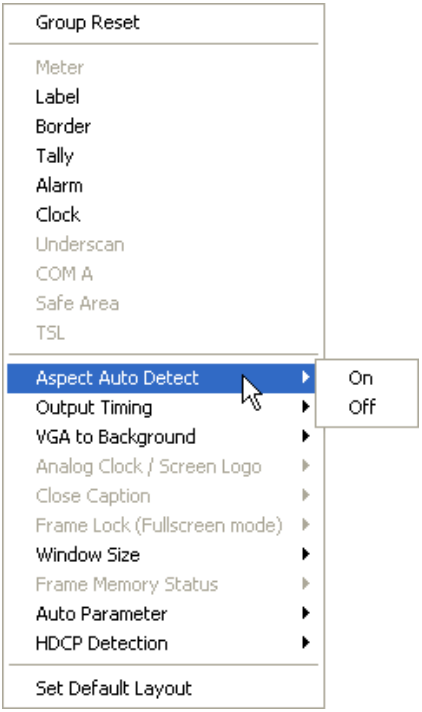
2. The following screen will appear.



3. Select the **Setting COM A** option (if applicable).
4. Set the **Baud Rate**.
5. Select the **Mode**.
   - **Normal** – for use with ASCII or TSI.
   - **Load File** – for use with the SCP (Simplified Control Panel) keypad.
6. After setting COM A, you will be prompted to close the Phoenix-G software and power cycle (shutdown and restart) the module.

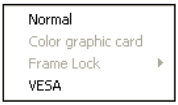
Aspect Auto Detect

This allows you to turn on / off automatic detection of the input signal's aspect ratio. For HD-SDI input signal, the aspect ratio will be 16:9; for SD-SDI / NTSC / PAL, the aspect ratio default setting is 4:3.



Output Timing

There are two output timings namely **Normal** and **VESA**. **Normal** output timing is designed for some brands of monitor displays that do not support the **VESA** standard. The default setting for output timing is **Normal**.



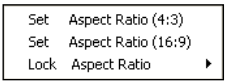
VGA to Background

This allows you to alter the sequence of a particular cascading window that appears on the monitor display. By default Window 1 should appear on top of Window 2 but you can move it to be behind Window 2 into the background.

NOTE: This item may not be available when displaying HDCP-compliant content.

Window Size

There are three sizes that can display all the windows in a group: **4:3**, **16:9**, or **Lock Aspect Ratio**.



When changing the width of the window, the height will automatically adjust to match the aspect ratio. When **Lock Aspect Ratio** is set to **On**, the aspect ratio of the video display will be maintained, even if the window is stretched. If the image is **4:3** and it is stretched to **16:9**, the result is two vertical black bars appearing on either side of the display. If the image is **16:9** and it is scaled down to **4:3**, then it will have a letterbox effect.

Auto Parameter

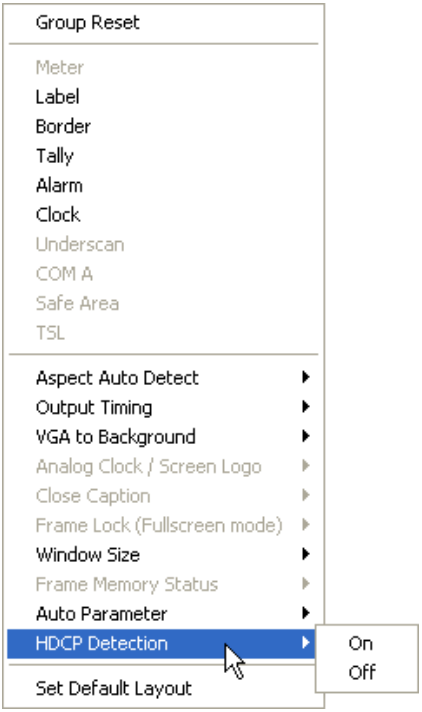
The Titan can automatically detect the display's optimum resolution of a particular group. To enable or disable this feature, perform the following steps:

1. Click **Auto Parameter**.
2. Move your mouse to **Detect Display Resolution**, then select **On** / **Off**.

NOTE: When the **Detect Display Resolution** option is set to **On**, all the presets will be displayed in the optimum resolution.

HDCP Detection

When set at **On**, allows the Titan to detect if the connected monitor display is HDCP-compliant as well as turn off VGA signal output via the **DVI-I Out** port. When set at **Off**, the Titan is unable to detect if the connected monitor display is HDCP-compliant but will allow output of VGA signal via the **DVI-I Out** port.



Set Default Layout

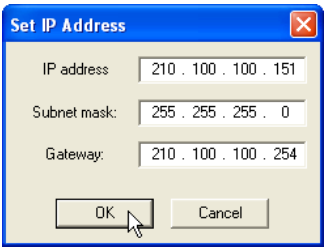
When you have multiple units cascaded together, you can quickly show all the windows by selecting **Settings→Group Parameter→Set Default Layout**.

Module Parameter

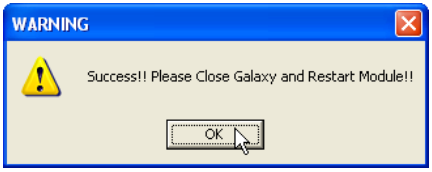
The following are the items appearing on **Module Parameter**.

IP Address

This allows you to change to an IP address different from the default one.



Upon clicking **OK**, the following screen will appear. Click **OK** again to confirm.



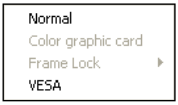
Auto Parameter

The Titan can automatically detect the display's optimum resolution of a particular module. To enable or disable this feature, perform the following steps:

1. Click **Auto Parameter**.
2. Click **Detect Display Resolution** to enable this feature (with checkmark).

Output Timing

There are two output timings namely **Normal** and **VESA**. **Normal** output timing is designed for some brands of monitor displays that do not support the **VESA** standard. The default setting for output timing is **Normal**.



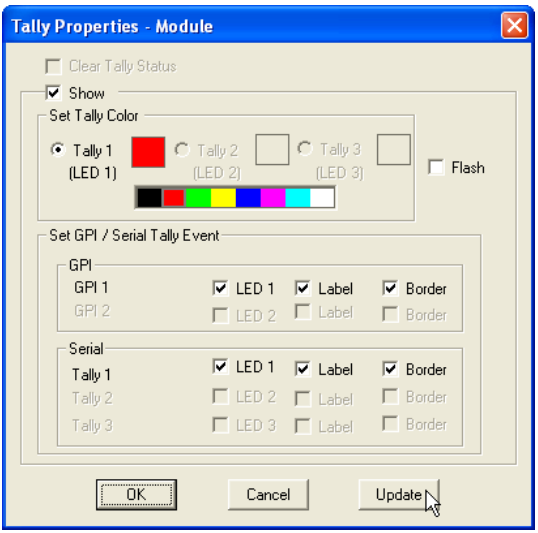
Clock Window

When the item **All Clocks** under **System Parameter** is set to **On**, a checkmark appears on this item. You can turn on (with checkmark) or off the clock window display. Click on the item to toggle between on / off.

Activating Tally

The RJ-50-to-GPI terminal block allows for a total of eight inputs to activate tally, two per window. You can also use the serial port with ASCII, TSI, or TSL to activate tally. To change the appearance of tally, perform the following steps:

1. Select **Settings→Module Parameter→Tally**. The following window appears:



Tally 1 is triggered by GPI.

2. The settings that can be adjusted include **Tally Color**, **LED**, **Label**, **Border**, and **Flash.**

VGA to Background

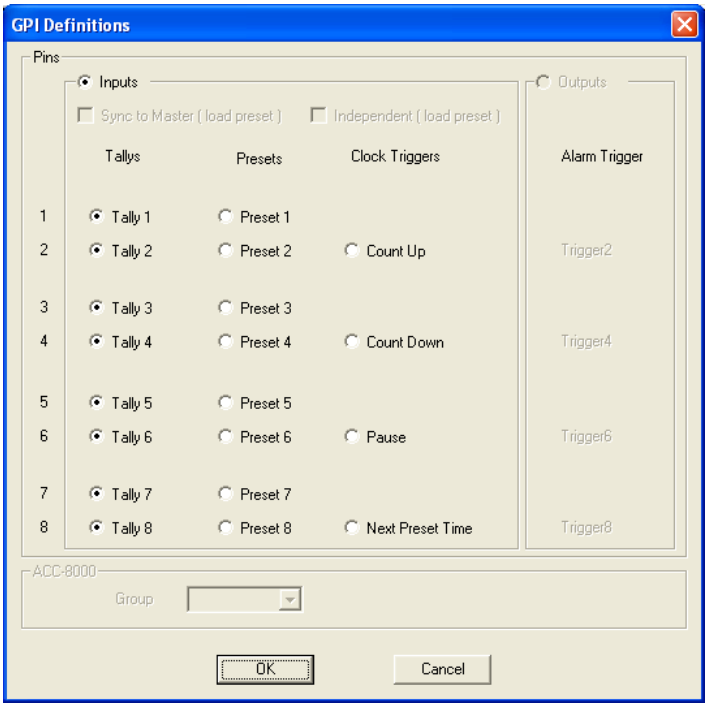
When the item **VGA to Background** under **Group Parameter** is set to **On**, a checkmark appears on this item. This allows you to alter the sequence of a particular cascading window that appears on the monitor display. By default Window 1 should appear on top of Window 2 but you can move it to be behind Window 2 into the background. Click on the item to toggle between on / off.

NOTE: This item may not be available when displaying HDCP-compliant content.

GPI Definitions

Eight positions can be found on the RJ-50-to-GPI terminal block that are assignable to either activate tally (one per video input), load presets, or trigger a clock event (pin 2, 4, 6, 8); but each pin can only be assigned to one task. To assign the definition of each GPI, perform the following steps:

1. Upon clicking **GPI Definitions**, the following screen appears:

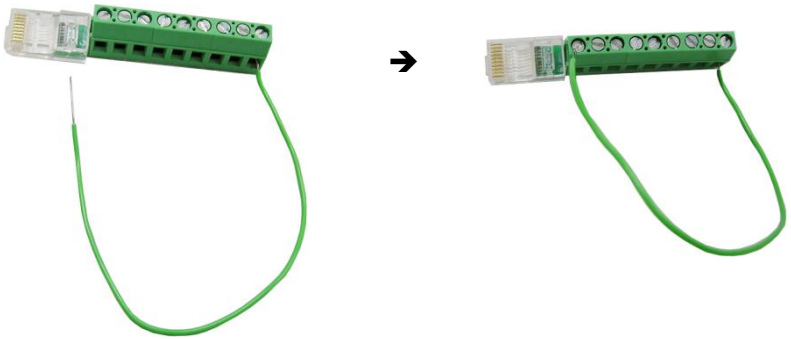


2. After you have finished assigning tasks to each GPI, click **OK** to finalize the changes.

NOTE:

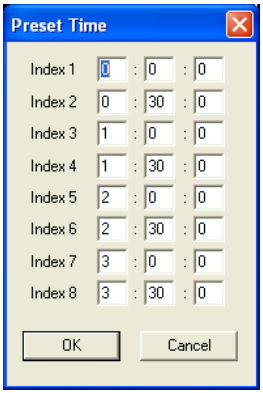
- The RJ-50-to-GPI terminal block adapter has eight positions that can each be used for setting tally and loading presets.
- By default, the terminal block is used to turn on / off the tally for each window:
  – Position 1 + GND = turns on main tally for window 1.
  – Position 2 + GND = turns on secondary tally for window 1.
  – Position 3 + GND = turns on main tally for window 2.
  – Position 4 + GND = turns on secondary tally for window 2.
  – Position 5 + GND = turns on main tally for window 3.
  – Position 6 + GND = turns on secondary tally for window 3.
  – Position 7 + GND = turns on main tally for window 4.
  – Position 8 + GND = turns on secondary tally for window 4.

Make sure that the RJ-50 GPI terminal block is inserted into the **GPI** port on the rear panel. The sample pictures below illustrate tapping the wire on position 1 to turn on the main tally for window 1.



Preset Time

Users can set the preset time (**1** – **8**), for count up or down, which can be recalled using GPI.



VCC OSD

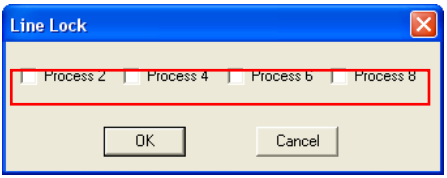
This allows you to turn on (with checkmark) or off your Titan OSD (on screen display) feature. Click on the item to toggle between on / off.

Apply Manual Image Settings (Position / Source Type and Gain)

This allows you to turn on (with checkmark) or off your Titan automatic detection of DVI / VGA input signal. Based on the settings stored in EEPROM, it will adjust the position and size, set DVI signal source type, and adjust the coloring of VGA image (intensity). This feature is most useful when restarting the Titan or when unplugging and plugging the DVI / VGA cable. Click on the item to toggle between on / off.

Line Lock

This feature was designed for the PELCO video camera CCC1380UH-6 and it only supports the PAL / NTSC video source. **Process 2** corresponds to the **Video 1** connector, **Process 4** corresponds to the **Video 2** connector, **Process 6** corresponds to the **Video 3** connector, and **Process 8** corresponds to the **Video 4** connector on the rear of the Titan.



VCC8000 BMP Label Resource

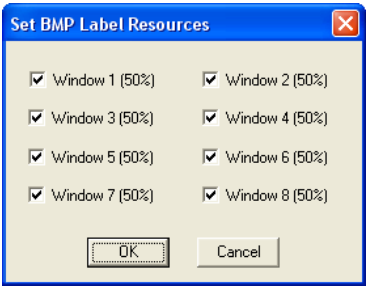
This allows you to allocate the **BMP Label Resources** for the eight (Titan) windows.

Window 1 and **Window 2** are both processed by the first 1601 IC (integrated circuit) chip. **Window 3** and **Window 4** are both processed by the second 1601 IC chip. **Window 5** and **Window 6** are both processed by the third 1601 IC chip. **Window 7** and **Window 8** are both processed by the fourth 1601 IC chip.

When a window (e.g., **Window 1**) is enabled (with checkmark) and the other window (e.g., **Window 2**) is disabled (no checkmark), the resource allocation for the first window will be 100 % and for the other window is 0 %.

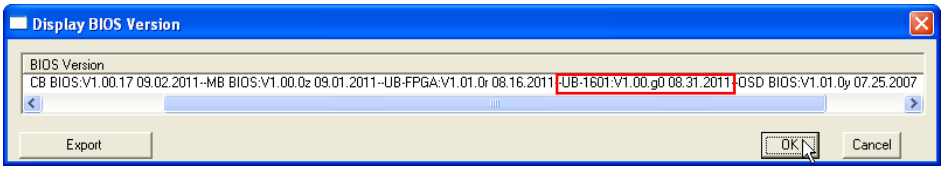
When both windows (e.g., **Window 3** and **Window 4**) are enabled (with checkmark), the resource will be evenly allocated (50 %).

When both windows (e.g., **Window 3** and **Window 4**) are disabled (no checkmark), the resource will still be evenly allocated (50 %). No simultaneous zero resource allocation (0 %) for both windows can occur.



NOTE:

- When a particular Window's BMP Label Resource is zero (0 %), the checkbox will be disabled (grayed-out).
- For Titan-8002V and Titan-8004V no BMP Label Resource allocation is required. The resource allocation for both models is 100 %.
- The UB 1601 firmware version "**0t**" does not support the **BMP Label** function, only version "**g0**" supports the **BMP Label** function. To find out the UB 1601 firmware version, go to **Help→Read BIOS Version** and the following screen will appear. The middle portion of the highlighted text string should read "**g0**".
- The UB 1601 firmware with version "**0t**" cannot be changed to version "**g0**" and vice versa (hardware limitation).

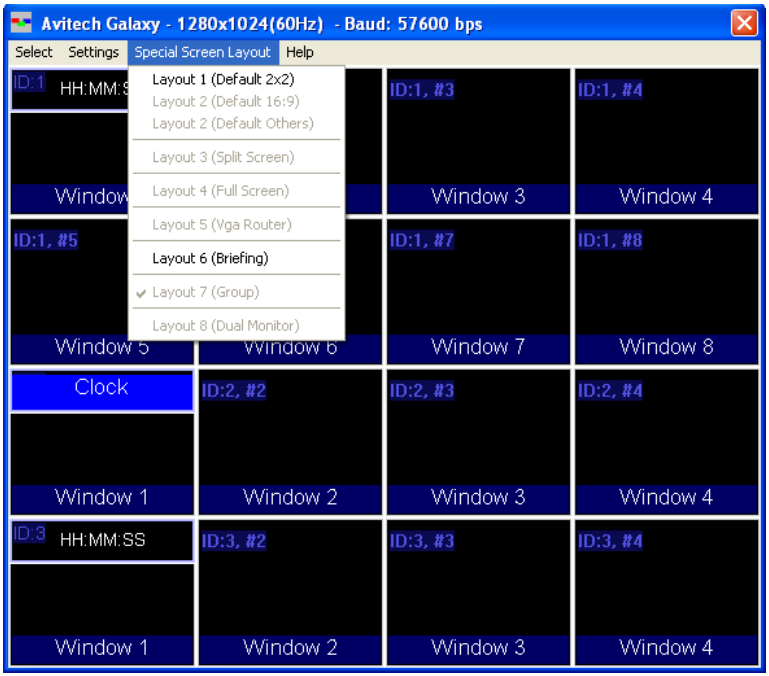


HDCP Detection

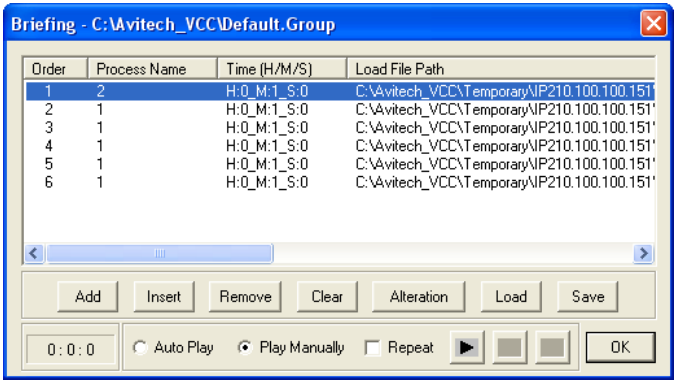
When the item **HDCP Detection** under **Group Parameter** is set to **On**, a checkmark appears on this item.

Special Screen Layout Menu

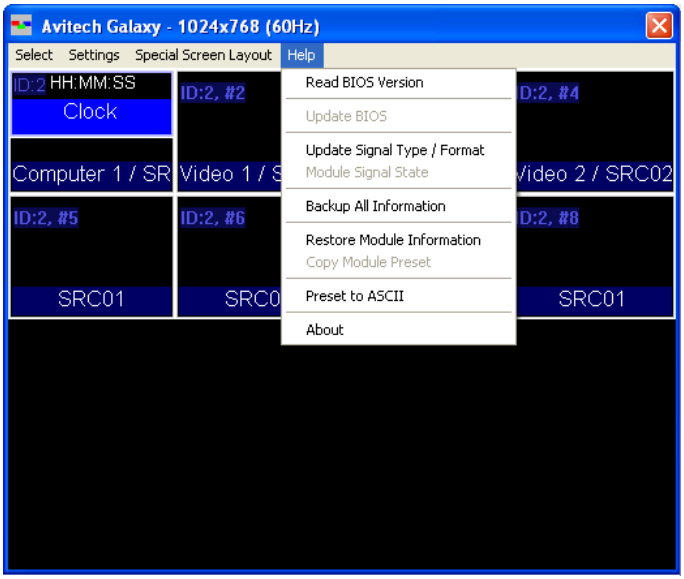
Some special screen layouts are available for the Titan (layouts that are grayed-out signify non-availability for your particular configuration):



- **Layout 1 (Default 2×2)** – quad split mode
- **Layout 6 (Briefing)** – cycle between presets for a slideshow effect



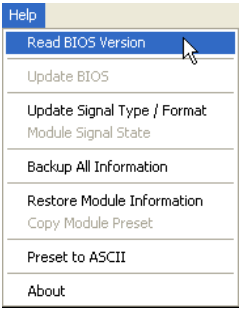
Help Menu



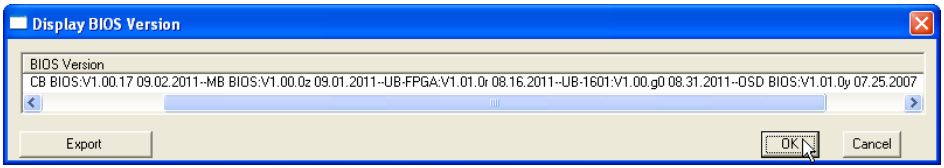
Read BIOS Version

To find out the Avitech Titan module firmware version, perform the following steps:

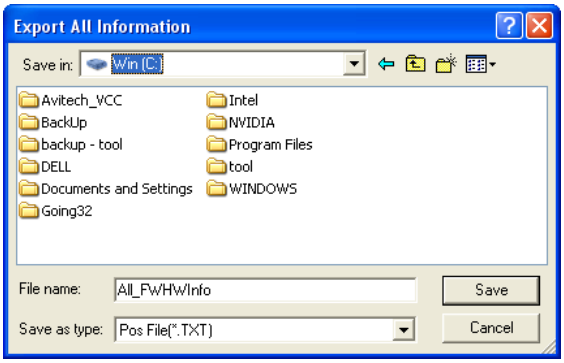
1. Click **Help**, and then click **Read BIOS Version**.



2. When the following screen appears, click **Export**.

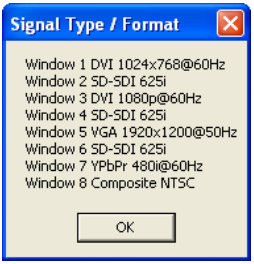


3. Assign a filename and click **Save** to save the data.



Update Signal Type / Format

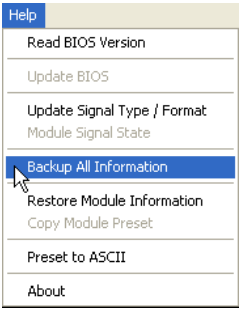
To update signal type / format, click **Update Signal Type / Format** and the next sample screen shows the entire image's signal type / format.



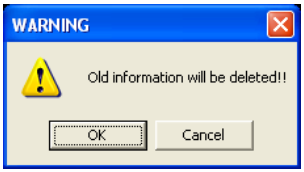
Backing Up Presets

To backup a preset, perform the following steps:

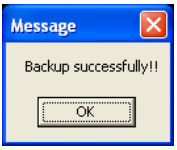
1. Click **Help**, and then click **Backup All Information**.



2. The following warning message appears, click **OK** to continue.



3. The following warning message appears when back-up is successful, click **OK** to continue.



This will backup all saved presets and system configuration files to your computer hard drive's "c:\Avitech_VCC\Backup\IPxxx.xxx.xxx.xxx\xxxx#_#" or "c:\Avitech_VCC\Backup\COM_1\xxxx#_#" folder.

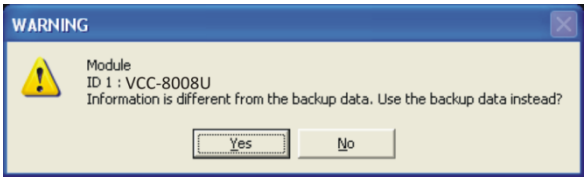
> **WARNING:** Everything in the **Backup** folder will be erased. If you have previously backed up presets, they will all be written over when you backup presets again. If you want to keep the old presets, move the entire **Backup** folder to a temporary directory (e.g., **`c:\temp`**).

This will create the following directories:
– “c:Avitech_VCC\Backup\”
– “c:Avitech_VCC\Temporary”

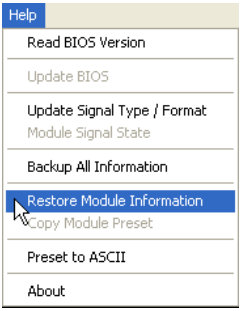
Restoring Presets

To manually restore a preset, perform the following steps:

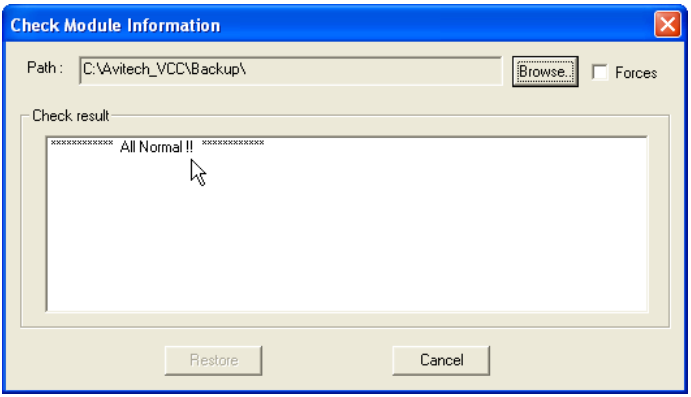
1. Set the Titan to the factory-default value (refer to Chapter 4 **Resetting to the Factory-Default State** for details).
2. Make sure that the rotary **ID** of the Titan being restored matches the old module (if the same module is not being restored), and that the form of communication is the same (IP or RS-232).
3. If the backup content is somewhere else other than at the “c:\Avitech_VCC\Backup\IPxxx.xxx.xxx.xxx\xxxx#_#” or “c:\Avitech_VCC\Backup\COM_1\xxxx#_#”, copy the backup data “xxxx#_#” into the “c:\Avitech_VCC\Backup\IPxxx.xxx.xxx.xxx\” or “c:\Avitech_VCC\Backup\COM_1\” location.
4. Run the Phoenix-G software and select **Yes** when prompted whether to restore the module using the backup data.



5. Click **Help**, and then click **Restore Module Information**. You should see a progress bar showing the preset being loaded into the Titan.

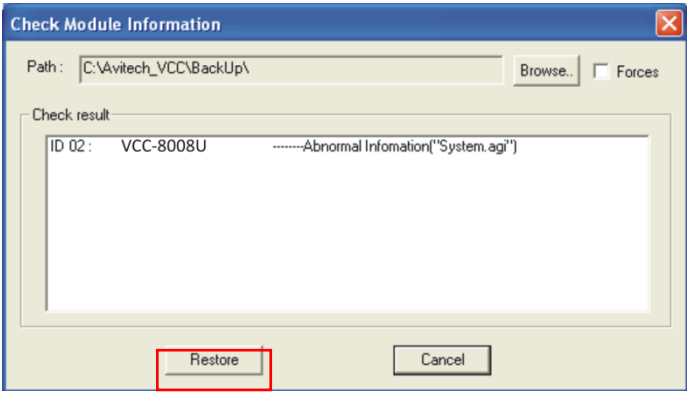


6. When the following screen appears, the checking result confirms that everything is normal. If that is the case, click **Cancel** to exit restoring of preset(s). You may skip steps 7 and 8.

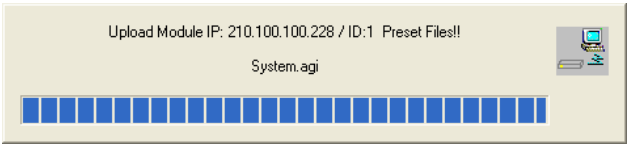


NOTE: You can click to enable the **Forces** checkbox (located on the upper right corner) that allows the backup information to be written to all the module(s) flash memory. The **Restore** button will be enabled so you can click on it.

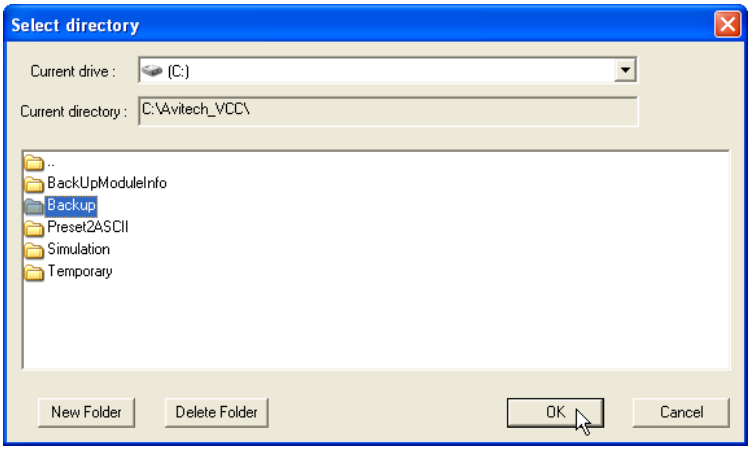
If the checking result shows an **Abnormal** report, confirm if the backup **Path** is correct. Then click **Restore.**



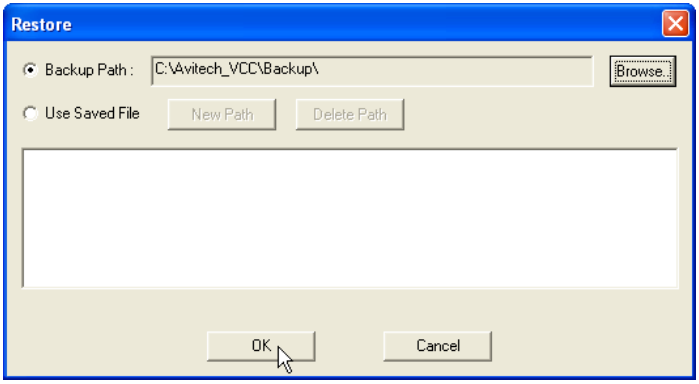
The progress of the restore process will be shown.



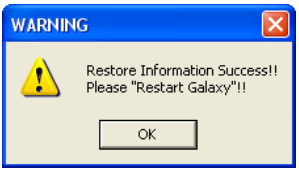
If the backup **Path** is incorrect, click **Browse** to select the correct location. Then click **OK** to continue.



7. Click **OK** when the next screen appears to continue.

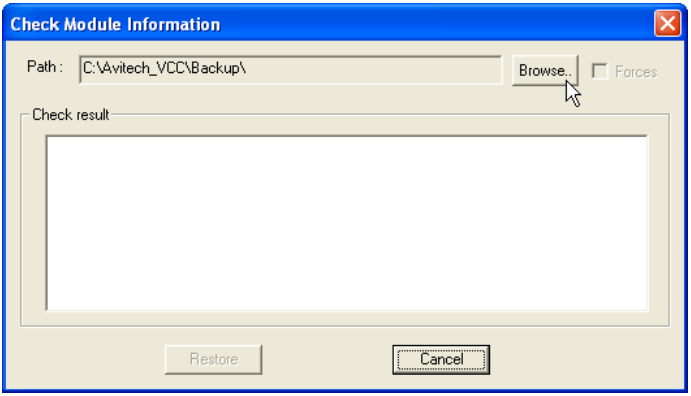


8. Click **OK** when the next screen appears to restart the Phoenix-G software.

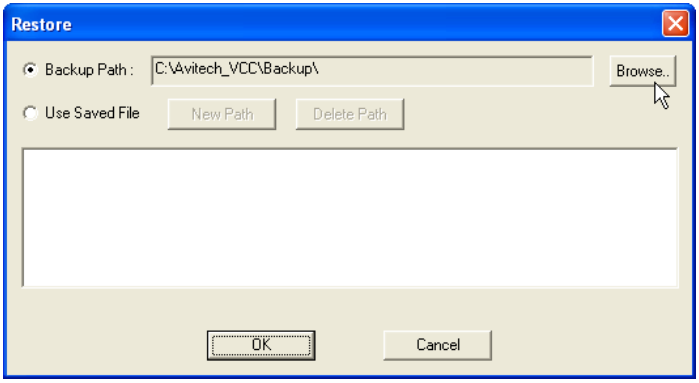


NOTE: If upon clicking **Restore Module Information** on the **Help** menu and the following error message appears, click **OK**.

On the next screen, click **Browse**.

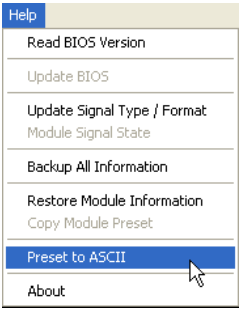


On the next screen, click **Browse** again to specify the correct backup **Path**.

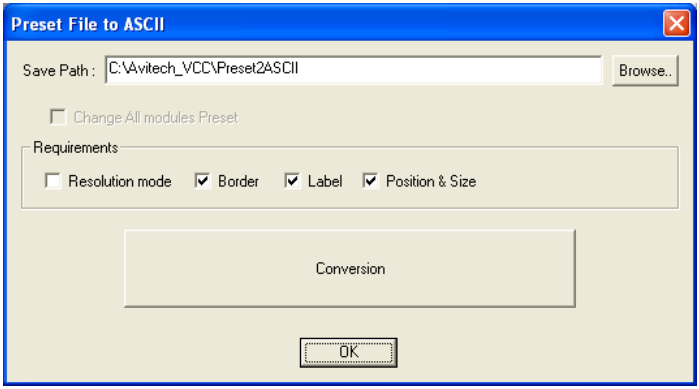


Saving Preset File to ASCII

1. Click **Help**, and then click **Preset to ASCII**.



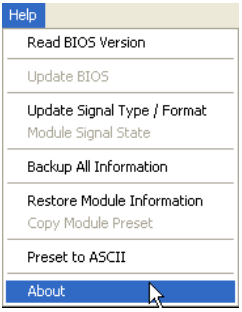
2. When the following screen appears, confirm if the **Save Path** is correct. If incorrect, click **Browse** to select the correct location.



3. Select the **Requirements**, and then click **Conversion**.
4. Click **OK** to exit.

Read Phoenix-G Information

1. Click **Help**, and then click **About**.



2. You should see a pop-up box showing the Phoenix-G software information.

Quick Keys – Change Window to / from Full Screen Mode; Swap Window Contents

Two quick keys are available that allow you to quickly bring a window to / from full screen mode, as well as swap the contents from one window to another by performing the following steps:

1. To change to full screen mode, double-click the mouse on a window. Double-click again to return from full screen mode.

2. To access the swap window quick key, move your cursor to the bottom left corner of a window until a capital letter **S** appears.

3. Click on the capital letter **S** to select the source window and then click again at a destination window where you want to swap the contents from the source. This will swap all the contents and properties of the source window to the destination window.

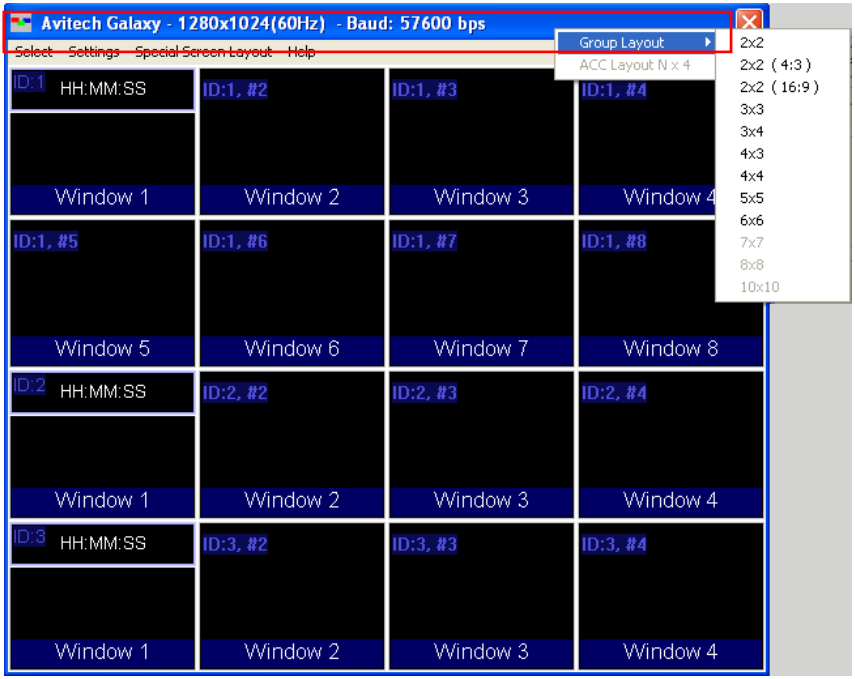
Window Layout

Setting the Default Layout (by Group)

When you have multiple units cascaded together, you can quickly show all the windows by selecting **Settings→Group Parameter→Set Default Layout**.

Arranging Windows (by Group)

To quickly setup the layout for your video windows, right-click the mouse on the title bar to access the **Group Layout** menu. Select from **2×2** up to **6×6** as possible grid positions on the monitor display.



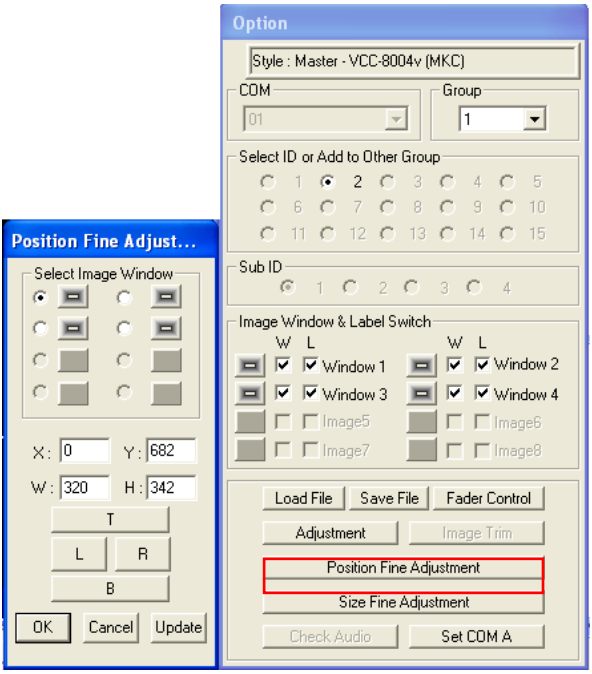
Repositioning an Individual Window

To reposition a window, perform the following steps:

1. Drag the center of a window and drop to a new position and it will update on the monitor display. Or,

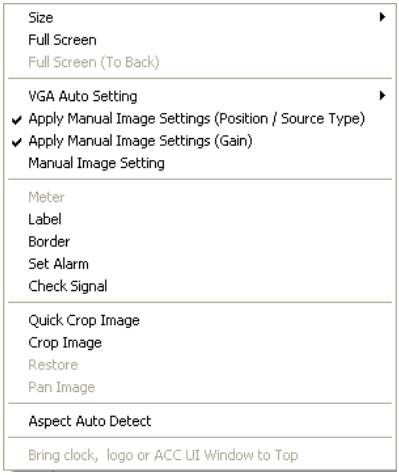
Option Window

2. Use the **Position Fine Adjustment** menu to adjust the position of any window on a pixel by pixel basis. Keep in mind that the width increases in 16 pixel increments and the height in 1 pixel increments.



Mouse Right-click Menu

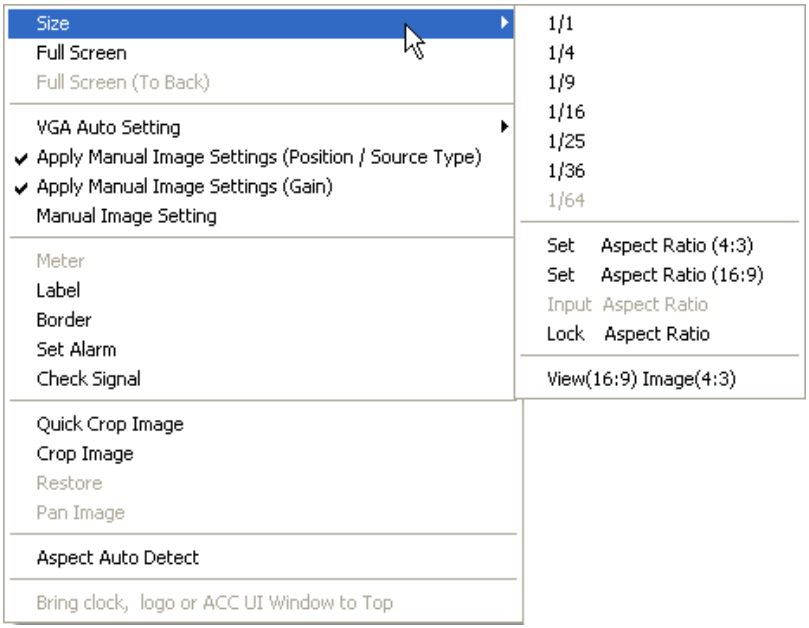
To change the properties of an individual window, right-click the mouse on the particular window to access the window's menu.



Resizing Window

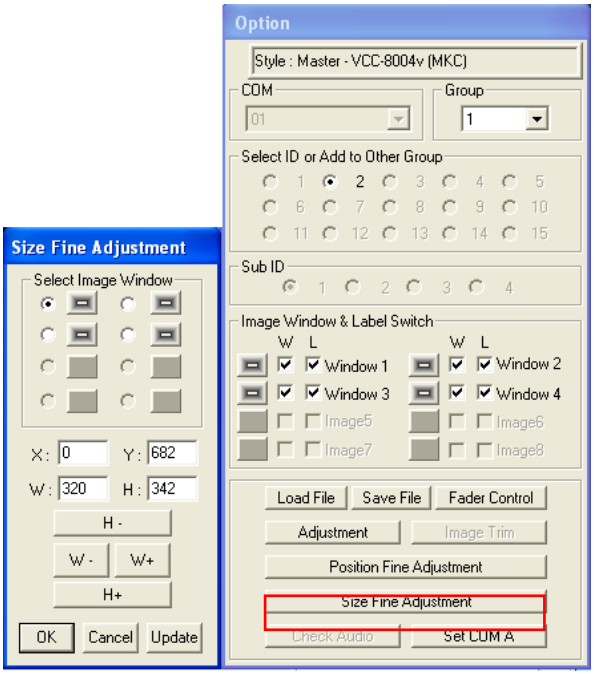
To resize a single window to one of the preset sizes, perform the following steps:

1. Right-click the mouse on a particular window and select **Size**, followed by the desired preset size selection.



2. Alternatively, resize a window by dragging the border of a window to the desired size. Keep in mind that there is a scaling limitation for each window that limits the maximum scaleable size to 816×465 pixels for NTSC video and 816×560 for PAL video.

3. Another option is to use the **Size Fine Adjustment** menu to adjust each window on a pixel by pixel basis. Keep in mind that the width increases in 16 pixel increments and the height in 1 pixel increments.



4. On a particular window select **Full Screen** to maximize the image and fill up the whole screen. Or select **Full Screen (to back)** to maximize the image to appear on the background.

> **NOTE**: **Full Screen (to back)** may not be available when displaying HDCP-compliant content.

Automatic VGA Signal Adjustment

When using a VGA signal with the **Computer/YPbPr 1 – 4** on the Titan, there will be times when the image is not aligned in the window or the color is off, the **VGA Auto Setting** feature was designed to overcome these issues.

Right-click the mouse on the **Computer/YPbPr 1 – 4** window, click **VGA Auto Setting**, and then select **Auto Image Adjustment** to align the VGA image inside the window, **Auto Gain** to correct the color values, or **Export Settings** to export the configuration settings as **INI** files.

> **NOTE**: Some VGA-to-DVI cables may not work with the **Computer/YPbPr 1 – 4** / **DVI-I Cascade** / **DVI-I Out** ports of the Titan, use the proprietary VGA-to-DVI adapter instead.

Apply Manual Image Settings (Position / Source Type and Gain)

This allows you to turn on (with checkmark) or off your Titan correction of DVI / VGA input signal. Based on your settings stored in EEPROM or in the next item **Manual Image Setting** (if any), it will adjust the position and size, set DVI signal source type, and adjust the coloring of VGA image (intensity). This feature is most useful when restarting the Titan or when unplugging and plugging the DVI / VGA cable. Click the items to toggle between on / off.

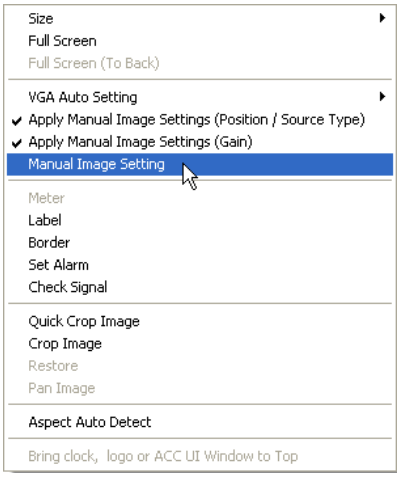
Manual Image Setting

After plugging in the VGA / DVI cable to the **Computer/YPbPr 1** / **2** / **3** / **4** port (you need to use the DVI-to-VGA adapter when connecting the VGA cable), Titan will automatically perform **Auto Image Adjustment** and **Auto Gain**. The sample display below shows the image is still off-centered (does not completely fill the upper and left portion).

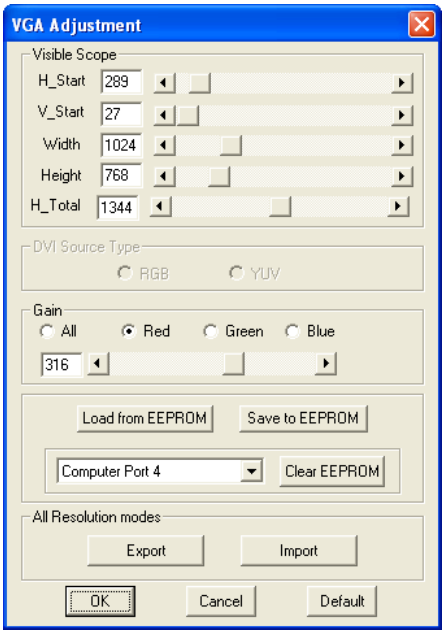
To use the **Manual Image Setting** feature to correct this problem, perform the following steps:

1. Make sure that the previous two items **Apply Manual Image Settings (Position / Source Type** and **Gain)** are enabled (with checkmark).

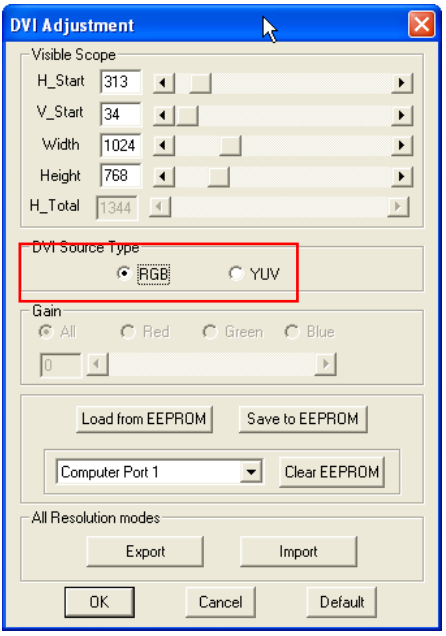
2. Use the mouse to right-click the VGA / DVI input source window and the following menu appears.



3. Click **Manual Image Setting** and the following screen will appear.



VGA Signal Input Source



DVI Signal Input Source

4. (For DVI signal input source only)
   Specify if the **DVI** signal **Source Type** is **RGB** or **YUV**.

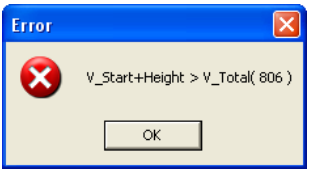
5. Use the slider to adjust the value of **H_Start**, **V_Start**, and **H_Total**. Continue the adjustment until the image has completely filled up the entire window.

   H_Start: use the slider to increase the value. The window will start moving towards the left, the dark portion will be reduced. Continue the adjustment until the image is aligned horizontally.

   V_Start: use the slider to increase the value. The window will start moving upwards, the dark portion will be reduced. Continue the adjustment until the image is aligned vertically.

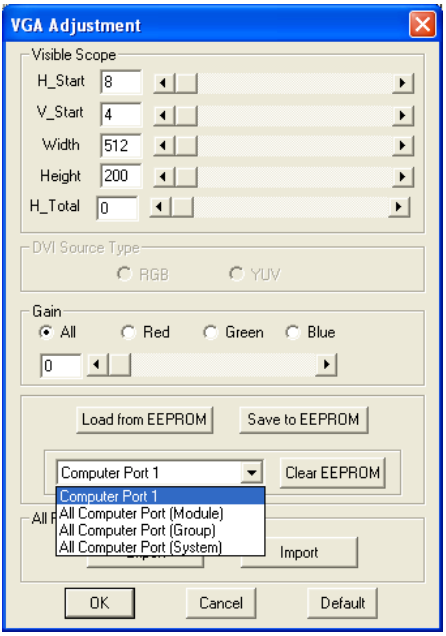
IMPORTANT:

- Make sure that the values of **H_Start** plus **Width** must not exceed **H_Total**.
- The value of V_Total based on the values of **V_Start** plus **Height** must not exceed the value automatically computed (by the software) based on the input signal's pre-determined value for V_Total. If not, the following error message will appear.



6. (For VGA signal input source only)
   Change the **Gain**'s value if necessary. The next sample figure shows the window has been adjusted properly.

7. Select if the adjustments are to be applied to the particular window only (**Computer Port #**), **All Computer Port (Module)**, **All Computer Port (Group)**, or **All Computer Port (System)**.

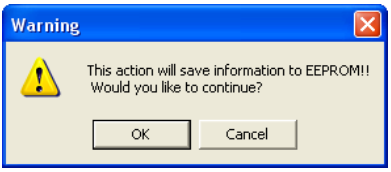


8. Click **Save to EEPROM** to save the new adjustments in EEPROM.

NOTE:

- EEPROM can store up to 56 sets of the DVI / VGA signal's **Visible Scope** and VGA signal's **Gain** parameters.
- When using the Phoenix-G software to command "gm1601" to perform **Auto Image Adjustment** or **Auto Gain**, "gm1601" will not use the parameters stored in EEPROM. The purpose of this is so that when the user makes the wrong settings, you can use **Auto Image Adjustment** or **Auto Gain** to cause the DVI / VGA setting values to attain the nearest correct value, then use the Phoenix-G software's **Manual Image Setting** function to perform minor adjustments to attain the correct values. This will allow the user to adjust the DVI / VGA parameters quickly.
- "gm1601" will not automatically save the DVI / VGA parameters to EEPROM. You must use the Phoenix-G software's **Manual Image Setting** dialog box's **Save to EEPROM** function.
- Click **Load from EEPROM** to use the **Manual Image Setting** values and make sure that the **Auto Image Adjustment** and **Auto Gain** options are enabled. This will allow the firmware to automatically use the saved parameters.
- When using the DVI / VGA input source with the same resolution but with different display card, or when using the same display card but with different resolution, the image displayed on the screen may be off-center (misaligned). In case this happens, perform the necessary settings and save the configurations to EEPROM.

9. When the following screen appears, click **OK** to continue.



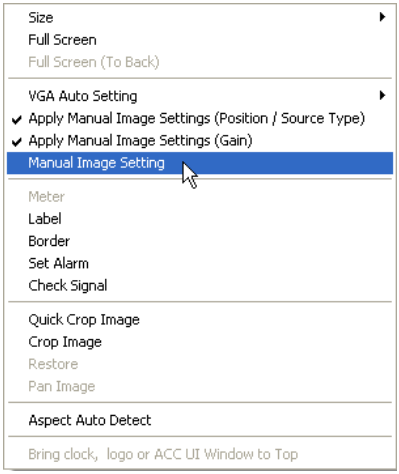
10. Click **OK** when the next screen appears.

NOTE:

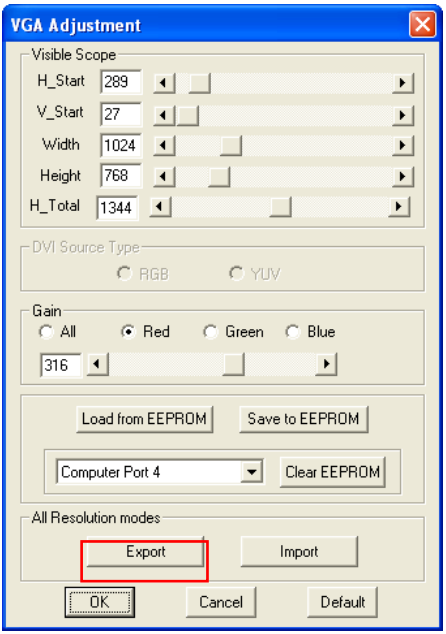
- When the **Auto Image Adjustment** function is enabled, and upon restarting the Titan, or unplugging / plugging the DVI / VGA cable, or change in DVI / VGA signal, “gm1601” will perform **Auto Image Adjustment**, and then look up the **Visible Scope** values stored in EEPROM. The values of the **Visible Scope** stored in “gm1601” will be used to adjust the DVI / VGA image. This function is used to fix the inability of the DVI / VGA image to fill up the entire window.
- When the **Auto Gain** function is enabled, upon restarting the Titan, or unplugging / plugging the VGA cable, or change in VGA signal, “gm1601” will look up the **Gain** value stored in EEPROM. If the **Gain** value is found in “gm1601,” it will then adjust the ADC based on the **Gain** value found in EEPROM. If the **Gain** value is not found in EEPROM then “gm1601” will perform **Auto Gain**. This function can fix the image coloring problem (intensity) of the VGA signal coming from the computer.

To extract the VGA / DVI modes stored in the EEPROM and burn-in these modes to all the new modules, perform the following steps:

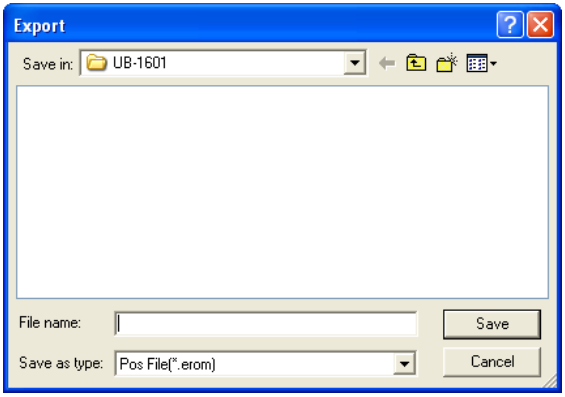
1. Use the mouse to right-click the VGA / DVI input source window and the following menu appears.



2. Click **Manual Image Setting** and the following screen will appear.

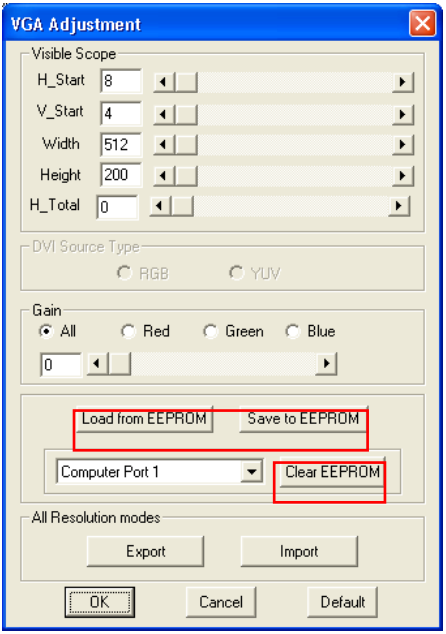


3. Click **Export** to extract the VGA / DVI modes stored in the EEPROM. The following screen appears.



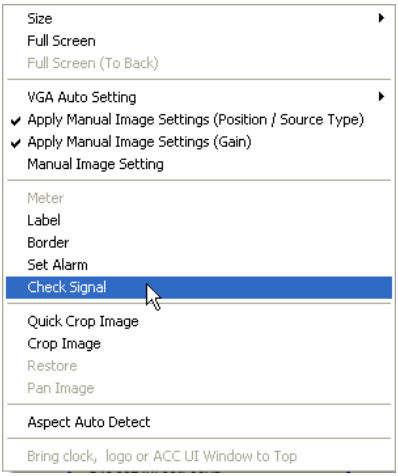
4. Assign a filename and click **Save** to save the data.

5. Click **Save to EEPROM** to save the new DVI / VGA / YPbPr input adjustment values and click **Load from EEPROM** to use the restore function (changes the VGA / DVI adjustment values to the previously saved values in EEPROM). Or click **Clear EEPROM** to return to the factory-default values.

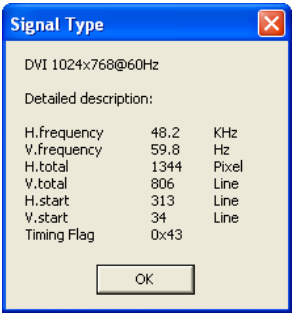


To check the input source timing of a window, perform the following steps:

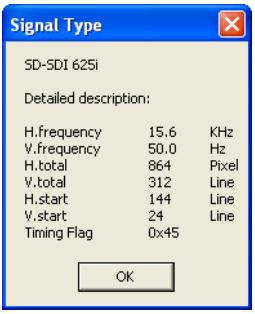
1. Use the mouse to right-click the process window and the following menu appears.



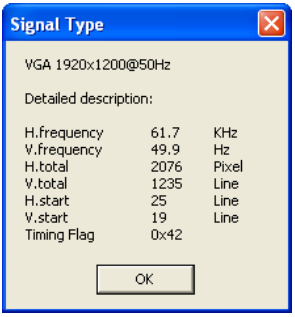
2. Click **Check Signal** and the following shows a sample **Signal Type** window for a DVI input source.



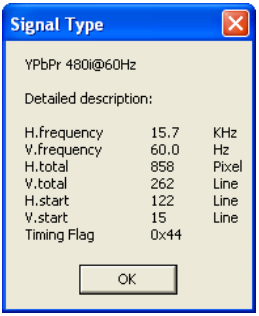
The following shows a sample **Signal Type** window for a SDI input source.



The following shows a sample **Signal Type** window for a VGA input source.

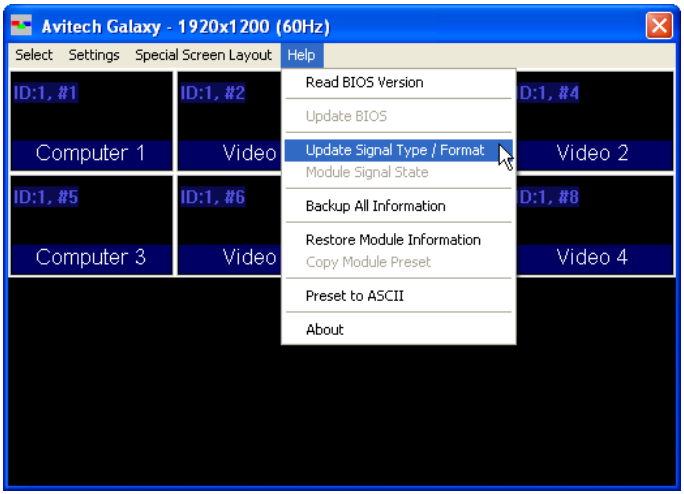


The following shows a sample **Signal Type** window for a YPbPr input source.

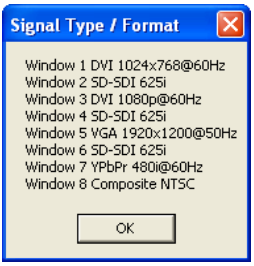


To check all input sources, perform the following steps:

1. Click **Help**, and then click **Update Signal Type / Format**.



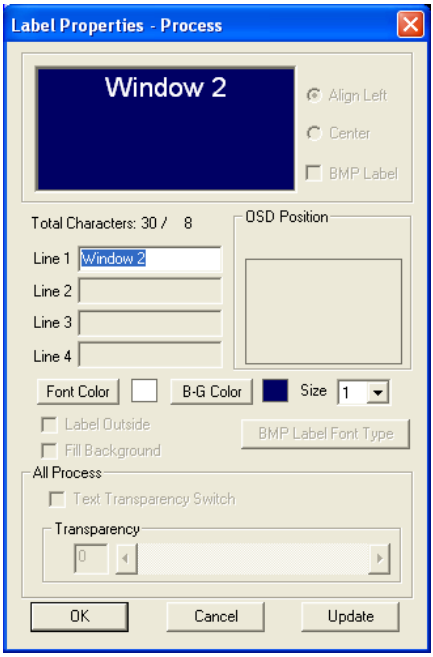
2. The following sample window will appear.



Setting Label Properties

1. Right-click the mouse on a window and select **Label** to enter in the text.

2. Keep in mind that each window supports one line of text up to 30 characters.

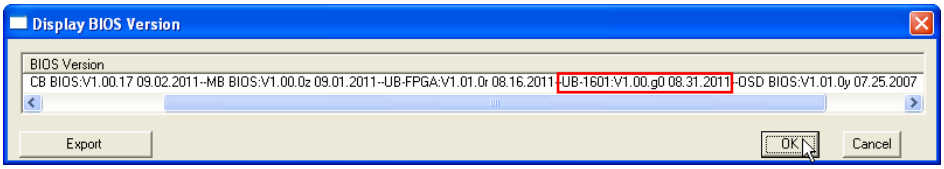


- **BMP Label**: allows you to activate the universal fonts for labels by performing the following steps:
  1. Click to enable the **BMP Label** checkbox (with checkmark).
  2. Click the **BMP Label Font Type** button.
  3. When the Font window appears, set the **Font**, **Font style**, and **Size**. Then click **OK**.
  4. On the **Line 1** window enter a label in the desired language by first selecting the language on the Windows taskbar.

  5. Repeat the above steps for all the other windows.

NOTE:

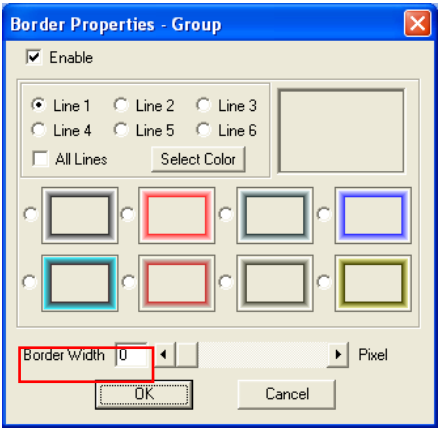
- The UB 1601 firmware version "**0t**" does not support the **BMP Label** function, only version "**g0**" supports the **BMP Label** function. To find out the UB 1601 firmware version, go to **Help→Read BIOS Version** and the following screen will appear. The middle portion of the highlighted text string should read "**g0**".
- The UB 1601 firmware with version "**0t**" cannot be changed to version "**g0**" and vice versa (hardware limitation).



Setting Border Properties

Borders are turned on by default, to turn off the border perform the following steps:

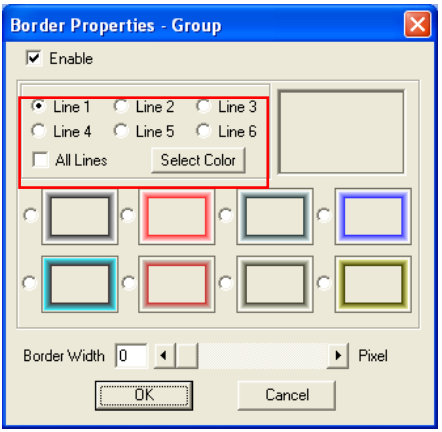
1. Upon clicking **Border**, the following screen appears.



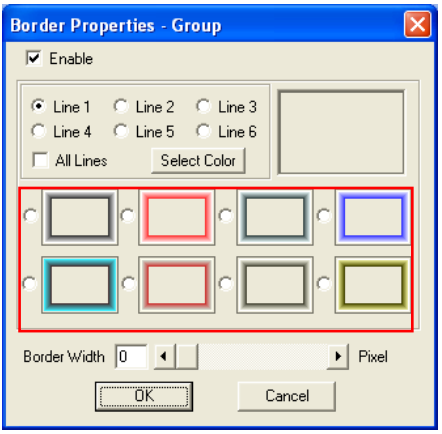
2. Change the **Border Width** to **0**.

3. You can also change the border color.

- Each pixel / line can be a different color

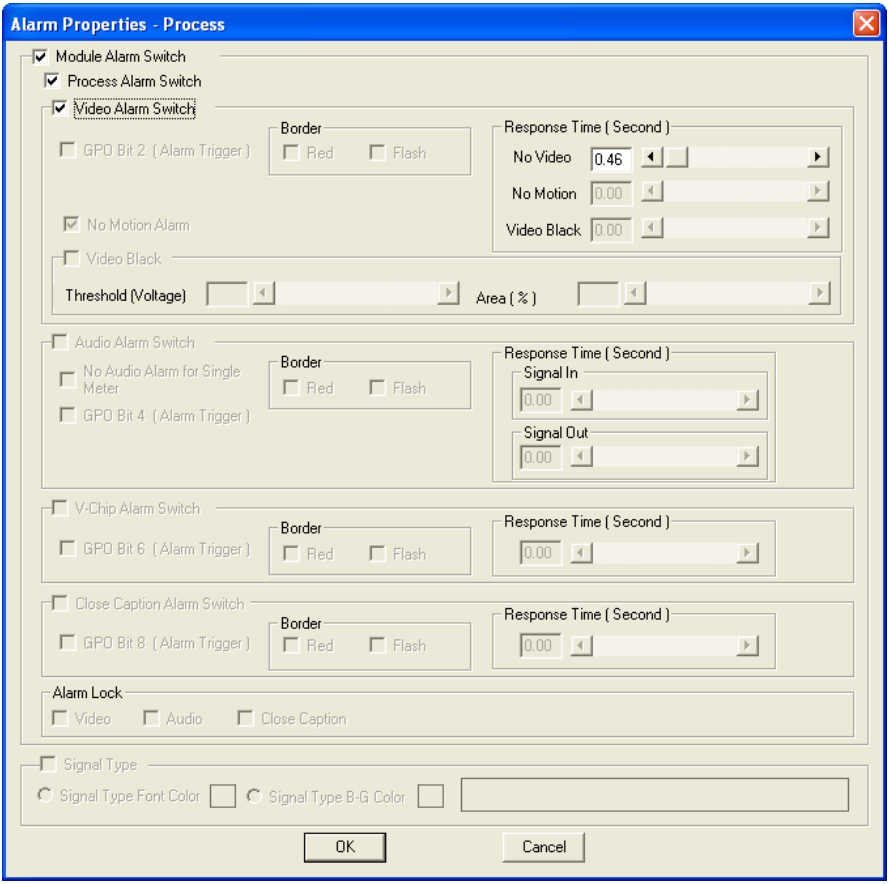


- 3D border



Set Alarm

Upon right-clicking a particular window, select **Set Alarm** and the following screen appears. Refer to a previous section “Activating Alarm” for details on setting the **Alarm Properties**.



Quick Cropping an Image on a Window

This allows you to crop (cut-out) an image on a particular window. Upon clicking **Quick Crop Image Box Size**, press the left mouse button to create a starting point and then drag to the desired location. Release the left mouse button to set the end point. A cropped out image of the former window would be created.

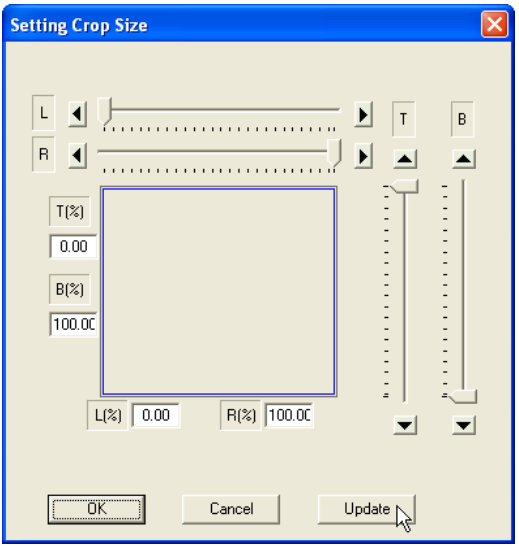
NOTE: The smallest allowed size of crop area is 96×80 pixels, based on the module's output resolution (not based on the "source" resolution).

Specifying the Size of a Cropped Image

This allows you to set the specific size of the crop (cut-out) image on a particular window. Freely adjust the horizontal (**L**eft and **R**ight) and vertical (**T**op and **B**ottom) markers, or enter the numerical value to set the size of the cropped image.

You can also click the buttons to make smaller adjustments to the markers. Example 1: if the Titan's output resolution is set at 1920×1200 but the input source resolution is 1920×1080, then pressing any of the four (4) buttons on a 25 % magnification would effect a proportionally four (4) pixel horizontal adjustment, while a 50 % or 100 % magnification would effect a proportionally two (2) pixel horizontal adjustment.
Example 2: if the Titan's output resolution is set at 1024×768 but the input source resolution is 1920×1080, then pressing any of the four (4) buttons on a 25 % magnification would effect a proportionally six (6) pixel horizontal adjustment, while a 50 % or 100 % magnification would effect a proportionally two (2) pixel horizontal adjustment.

Then click the **Update** button. A cropped-out image of the former window will be created.

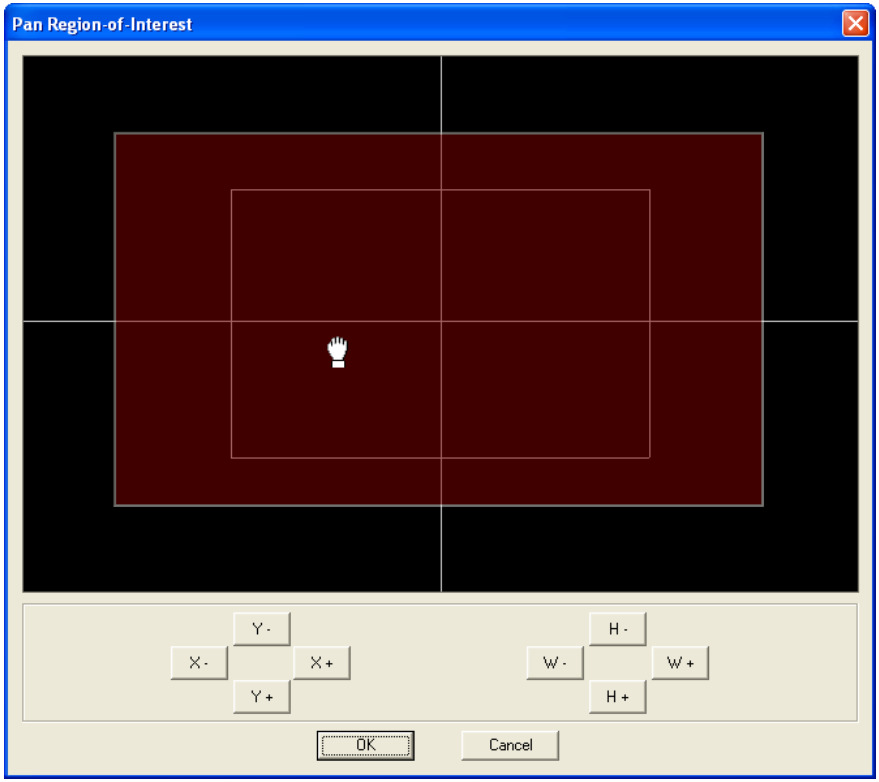


Restore

This allows you to undo the previous cropping action and restore the image prior to cropping (1:1). Then adjust (enlarge) the window size manually by dragging on the sides / corners.

Pan Image

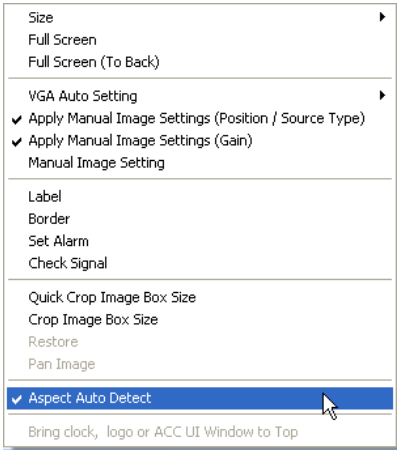
Upon clicking the **Pan Image** item, the following screen appears. This allows you to use the mouse (drag by using the symbol) to pan (see the **NOTE** below for description of pan) the cropped image window (zoom in area). You can also click the **X–** / **X+** / **Y–** / **Y+** (x / y-axis coordinates, plus or minus) or **H–** / **H+** / **W–** / **W+** (height / width, plus or minus) buttons to make smaller adjustments.



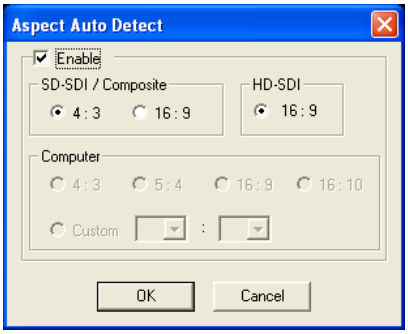
NOTE: To pan is to move the image around in the image window, usually when the image is larger than its window. Panning changes the image view in the same way that scrolling moves the image up, down, to the left, or to the right in the image window. When the entire image is not displayed, you can quickly pan to see parts of the image that were previously hidden.

Aspect Automatic Detection

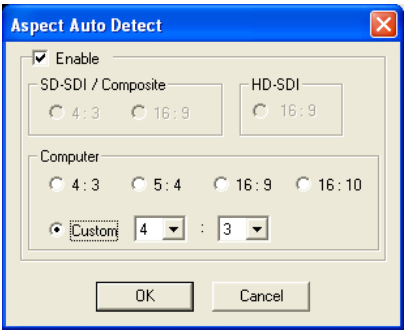
This allows you to enable the automatic aspect ratio detection feature for video window (**SD-SDI / Composite 4:3** / **16:9** and **HD-SDI 16:9**) or for computer window (**Computer 4:3** / **5:4** / **16:9** / **16:10** / **Custom**). When this feature is enabled, a checkmark appears in front of this option.



Upon clicking this item, the following window will appear.



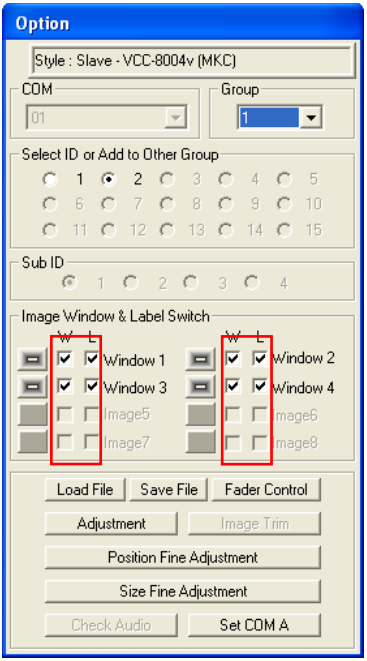
For video window



For computer window

Turning On / Off the Window / Label

1. The **Option** window has two checkboxes that can be used to close an image window (**W**) or turn off the label (**L**) for each window.



2. To turn off a window or label, find the checkbox that represents the selected window and un-check to disable the **W**indow or **L**abel.

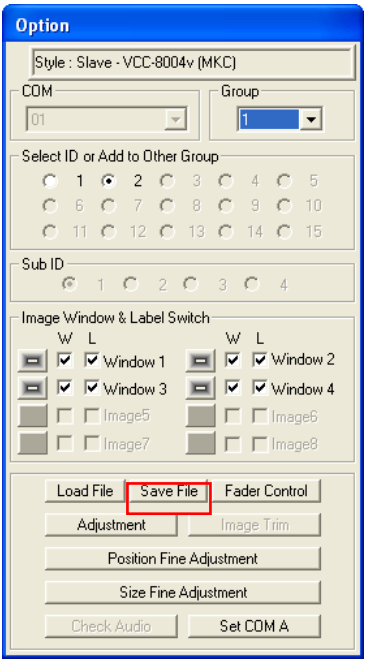
Saving to a Flash File

There are two instances that you will need to use the save to flash feature:

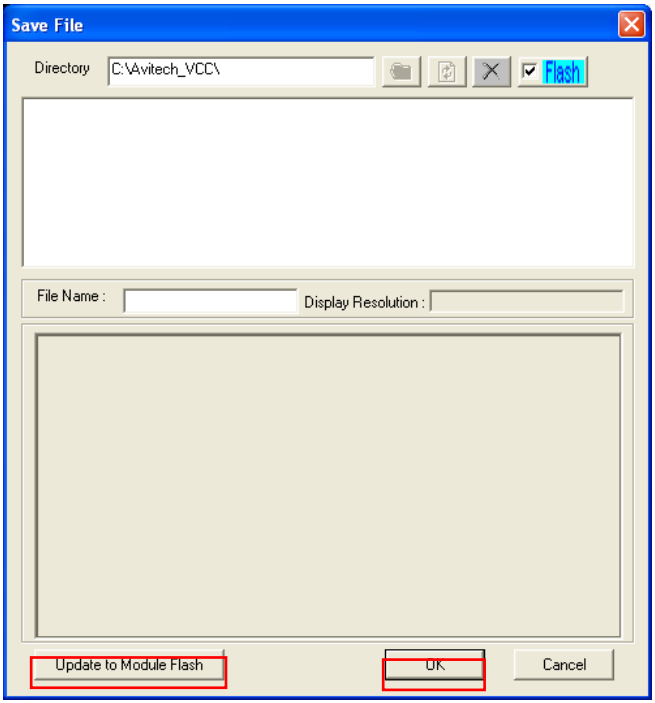
- After creating the master layout and you want the Titan to load it again when the unit is power cycled (shutdown and restart).
- After you are done saving presets and you want to save all the presets that were created into the internal flash memory of the module. If this action is skipped, the module will lose all the presets that were created.

To save to flash, perform the following steps:

1. Click **Save File** on the **Option** window.



2. Click **Update to Module Flash**, and then click **OK**.



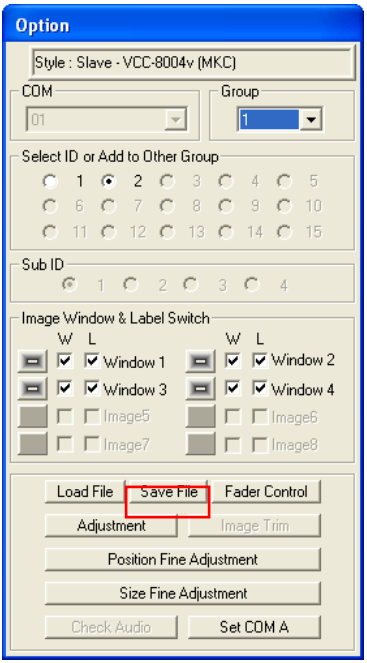
Or, close the Phoenix-G software and select **Yes** when prompted to save.

Saving a Preset

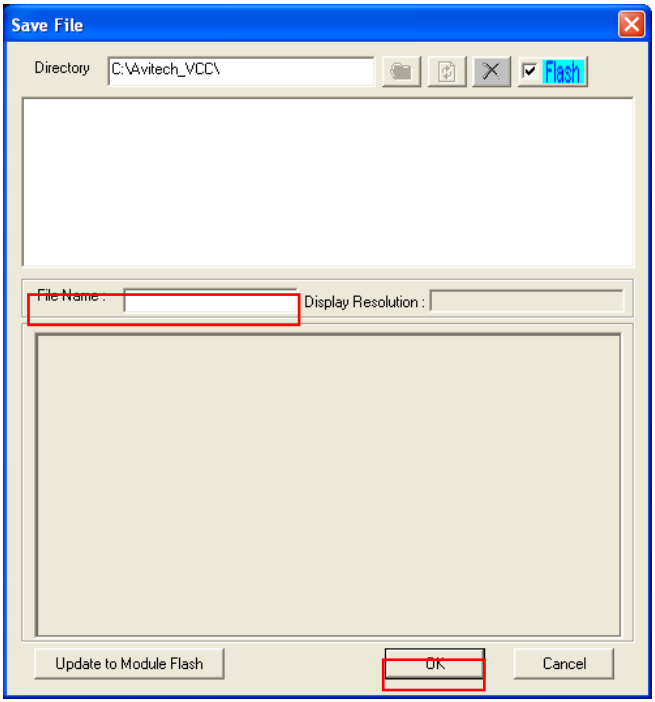
All the presets you create are stored in the Titan and not in the computer that is running the Phoenix-G software. In order to write all the presets into the internal flash memory of the Titan after creating it, you will need to save to flash. To save a preset, perform the following steps:

1. Configure the layout to how you want it to display.

2. Click **Save File** in the **Option** window.



3. When the next screen appears, enter a unique filename for the preset, and select **OK** to save.



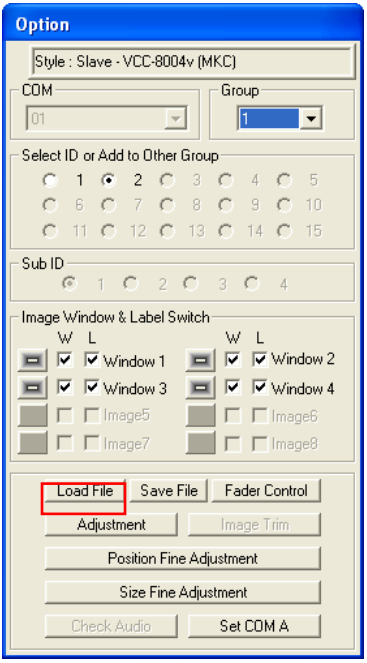
- When using a keypad, use the numbers **0** – **9** for your preset names.
- When using the GPI, use the numbers **1** – **8** for your preset names.

The file extension **GP#** will be automatically added to the filename.

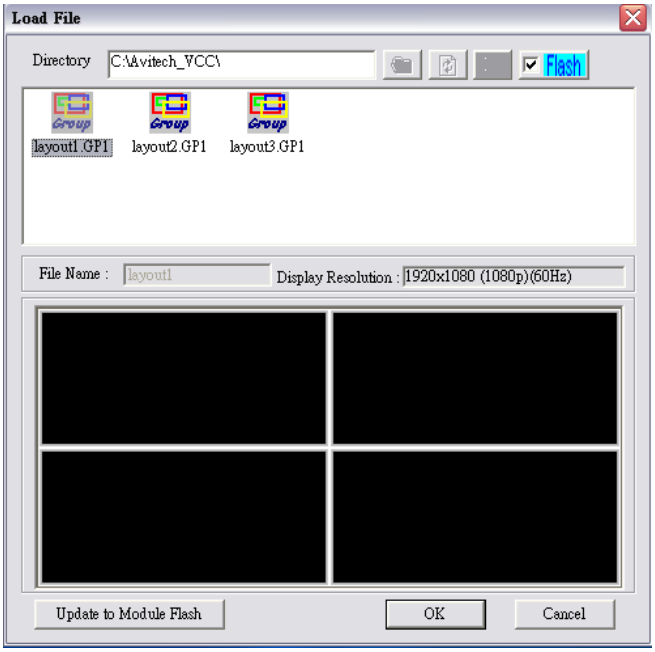
4. Repeat the above steps for each additional preset.
5. After you are done creating presets, load the file that you want to be the master layout, which gets loaded when the Titan is powered on.
6. Close the Phoenix-G software and select **Yes** when prompted to save to flash.

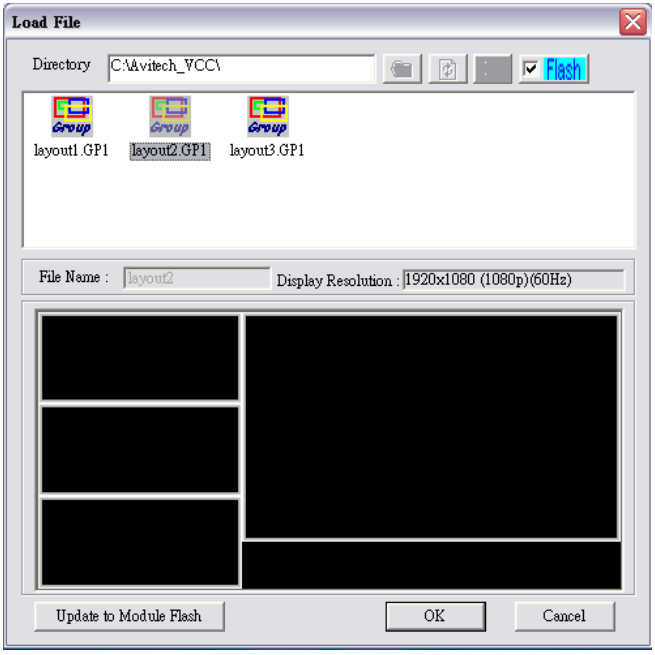
Loading File

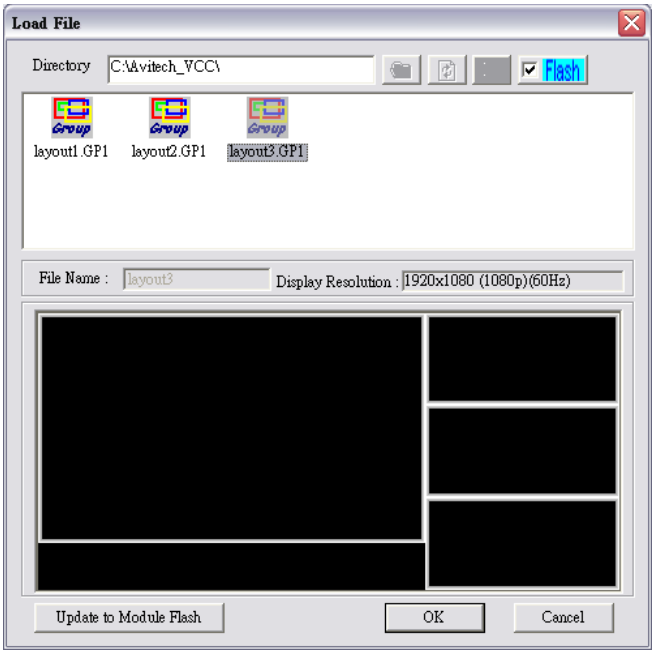
1. In the **Option** menu, click **Load File**.



2. Select a saved file, and then click **OK** to load the preset.

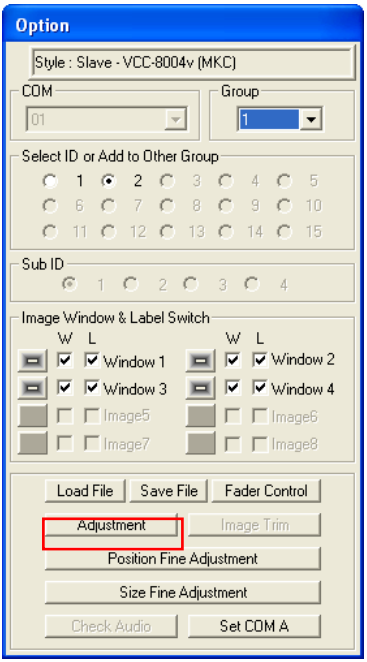



Load File
Directory
C:\Avitech_VCC\
Flash
layout1.GP1
layout2.GP1
layout3.GP1
File Name :
layout2
Display Resolution :
1920x1080 (1080p)(60Hz)
Update to Module Flash
OK
Cancel

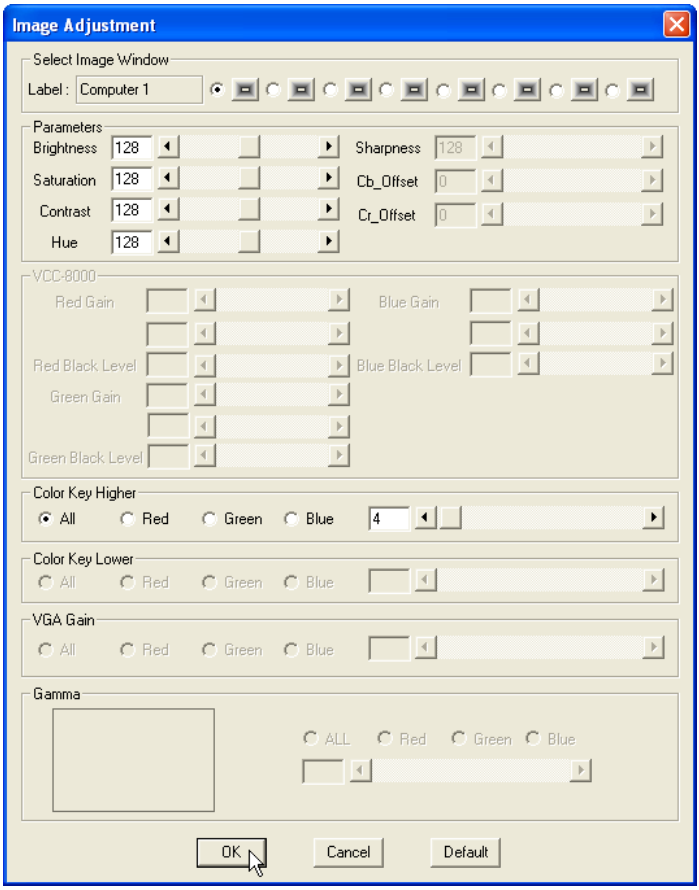

Load File
Directory
C:\Avitech_VCC\
Flash
layout1.GP1
layout2.GP1
layout3.GP1
File Name :
layout3
Display Resolution :
1920x1080 (1080p)(60Hz)
Update to Module Flash
OK
Cancel

Making Adjustments

1. In the **Option** menu, click **Adjustment**.



2. The following screen appears.



3. **Select** the **Image Window**, then you can adjust the input signal, such as **Brightness** (**0** – **255**), **Saturation** (**0** – **255**), **Contrast** (**0** – **255**), **Hue** (**0** – **255**), and **Color Key Higher** (**All** / **Red** / **Green** / **Blue**, **0** – **255**) parameters directly by using the sliders or clicking the radio button. Click the **Default** button on the lower right portion of the screen to reset the values to the factory-default.

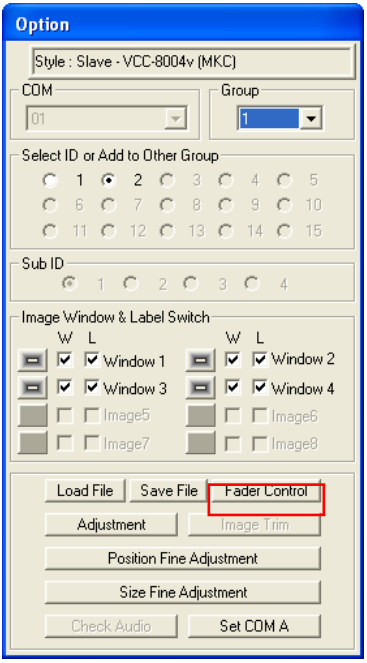
> **NOTE:** The **Color Key Higher** parameter can only be adjusted when **VGA to Background** under **Group** / **Module Parameter** is turned off (without checkmark).

Control Video Fade

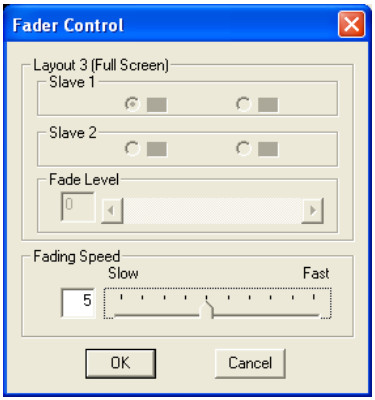
This allows you to set the speed that an overlapping pair of windows will fade into the background when another pair of windows becomes the active window (**Window 1** and **Window 2**, **Window 3** and **Window 4**, **Window 5** and **Window 6**, **Window 7** and **Window 8** are considered pairs).

> **NOTE:** For Titan **Window 1** and **Window 2** or **Window 3** and **Window 4** or **Window 5** and **Window 6** or **Window 7** and **Window 8** will fade simultaneously. This is because **Window 1** and **Window 2** are both processed by the first 1601 IC (integrated circuit) chip, **Window 3** and **Window 4** are both processed by the second 1601 IC chip, **Window 5** and **Window 6** are both processed by the third 1601 IC chip, while **Window 7** and **Window 8** are both processed by the fourth 1601 IC chip.

1. In the **Option** menu, click **Fader Control**.



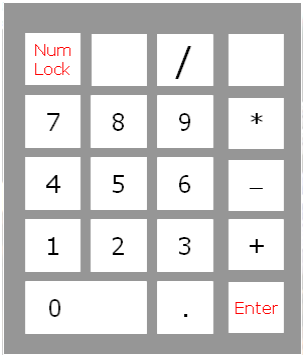
2. The following screen appears.



3. Adjust the **Fading Speed** directly by using the slider to select **Slow** (**1**) – **Fast** (**10**). Then click **OK**.

2 Simplified Control Panel

Aside from using the Phoenix-G software, you can use the optional numerical Simplified Control Panel (SCP) keypad that allows you to quickly recall presets, without having to use a computer. This chapter familiarizes you with using the Simplified Control Panel to load up to ten presets, saved in the flash memory of the Titan.



2.1 Using the Simplified Control Panel (Optional)

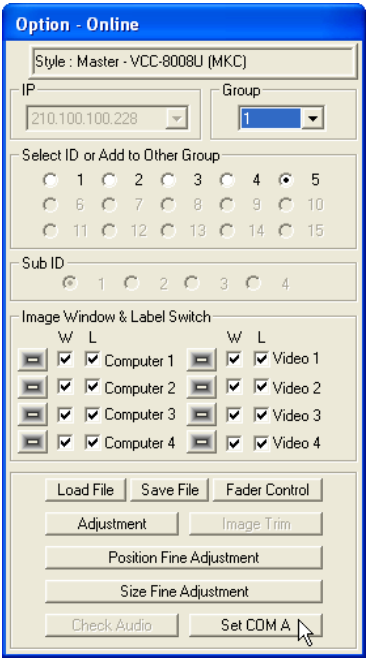
A single SCP can support multiple modules, as well as support up to 26 presets on 10 displays. For example:

- **11** signifies Display 1, Preset 1
- **19** signifies Display 1, Preset 9
- **99** signifies Display 9, Preset 9

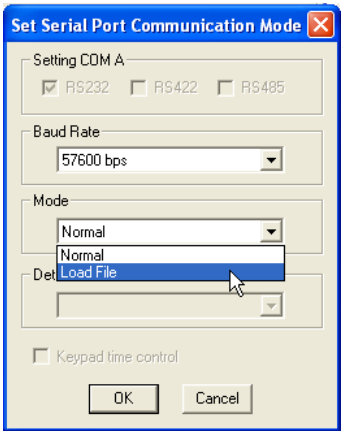
Preparing the Titan for Use with the SCP Keypad

To prepare the Titan for use with the Simplified Control Panel, perform the following steps:

1. Create up to ten presets with filenames **0** – **9** (up to ten groups). Refer to the previous chapter on saving presets.
2. On the **Option** window, click **Set COM A**.



3. When the next screen appears, select **Load File** on the **Mode** drop-down menu. Then click **OK**.



4. You will be prompted to shutdown the Phoenix-G software and save to flash.
5. Power off the Titan by unplugging the power cord. Then, plug in the SCP keypad to the rear panel's **Keypad** port.

   NOTE: If you need to connect again using the Phoenix-G software, you must first disconnect the SCP keypad.

6. Connect the power cord back to the Titan to power on.

Recalling Presets

The Titan COM port is automatically set to the following parameters:

- RS-232
- 8-bit data
- 1-stop
- No parity
- 9600 bps baud rate

> **IMPORTANT:** The **Num Lock** must be ON when using the SCP keypad.

To recall the presets, perform the following steps:

1. To login to the Simple Control Panel mode press **Enter** (takes around 15 seconds to collect the necessary information). The Titan will not respond to any other keys if it is not in SCP mode.
2. Use the Phoenix-G software's preset files saved in the Titan flash memory.

   The preset filename format is: **X.GPY**
   where **X** = **1** – **26**, this refers to preset **1** – preset **26**
   where **Y** = **1** – **n**, this refers to group **1** – group **n**
3. Recall preset mode 1:
   To recall the next preset file, press the **+** (plus) key.
   To recall the previous preset file, press the **–** (minus) key.
   The preset files within a group are loaded in a circular sequential order.
   (e.g., 11→12→17→18 --- →11→12……)
   To switch to Display mode, press **/** (slash) → **/** (slash) →**Enter** (total of three keys).
4. Recall preset mode 2:
   To recall a specific preset file, press the two number keys. The first number signifies the display number, the second number signifies the preset number. For example: pressing the **19** number keys would allow the Titan to recall display 1, preset 9 ("**9.GP1**" preset filename).

   > **NOTE:** The available hot keys and filename ranges from **00** = "**0.GP0**" to **99** = "**9.GP9**."

5. Recall preset mode 3 (supports recall of preset files **0** – **26**):
   Example 1: pressing **1** (one)→ **.** (point or period)→**1** (one)→**Enter** (total of four keys) would allow Titan to recall the "**1.GP1**" file.
   Example 2: pressing **2** (two)→ **.** (point or period)→**1** (one)→**7** (seven)→ **Enter** (total of five keys) would allow Titan to recall the "**17.GP2**" file.
   Example 3: pressing **3** (three)→ **.** (point or period)→**2** (two)→**6** (six)→ **Enter** (total of five keys) would allow the Titan to recall the "**26.GP3**" file.

6. To save the Titan preset configuration: press ***** (star or asterisk) → **/** (slash)→**Enter** (total of three keys). During this process (approximately five seconds), make sure that your Titan has a stable and uninterrupted power supply.

7. When the DVI-I port has an analog VGA input signal, the Titan can do automatic image adjustment by pressing the following three keys:
   . (point or period)→ ***** (star or asterisk)→**Enter**.

8. When the DVI-I port has an analog VGA input signal, the Titan can do automatic gain adjustment by pressing the following three keys:
   . (point or period)→ **/** (slash)→**Enter**.

9. To logout from the Simple Control Panel mode, unplug the SCP keypad from the rear panel's **Keypad** port.

3 Avitech ASCII Protocol

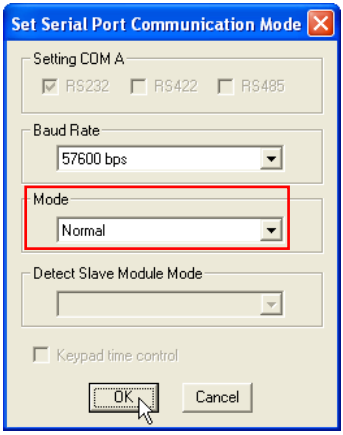
The Titan supports the ASCII command prompt interface. You can use HyperTerminal to control your Titan. The serial port (**RS-232**) and Ethernet port (**IP**) on the Titan can also be used to interface with a third-party controller for control over RS-232 / IP. This chapter familiarizes you with using the Avitech ASCII Protocol (AAP) of the Titan via Microsoft® Windows HyperTerminal function as an example.

3.1 Setting the RS-232 Port

Before using the ASCII Z command interface, make sure that the COM A (RS-232) port on the Titan is set at Normal (8-bit data, 1 stop bit, no parity, and no flow control). The default baud rate is 57600 bps. To correctly use the ASCII Z commands, use the Phoenix-G software's default Group and Module Number for the Titan.

NOTE:

- To set **COM A** to **Normal**. Click **Settings→Group Parameter→COM A**. When the next screen appears, select **Normal** on the **Mode** drop-down menu. Then click **OK**.
- Disconnect the SCP keypad if that is connected.



3.2 Setting the HyperTerminal's COM Port

To set the HyperTerminal's COM Port, perform the following steps:

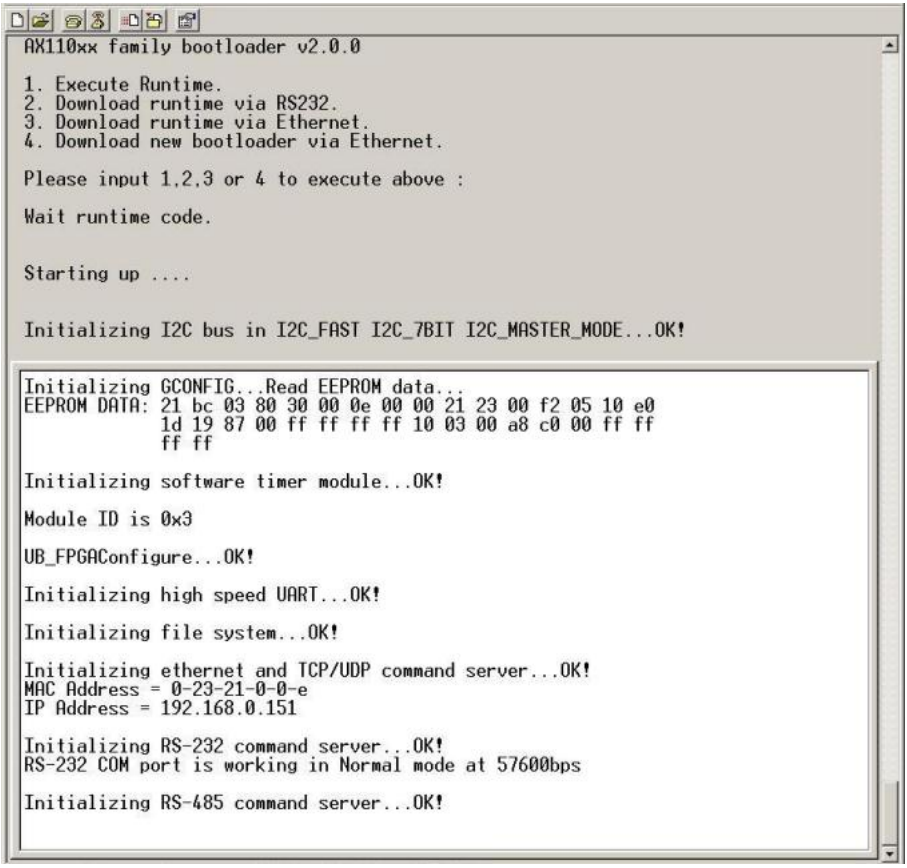
1. Click **Start→All Programs→Accessories→Communications→ HyperTerminal** to startup the Windows® HyperTerminal function.
2. Set the HyperTerminal's COM port to the following settings (same as RS-232 port setting):
   - Baud Rate: 57600
   - Data Bits: 8
   - Parity: None
   - Stop Bits: 1
   - Flow Control: None

3.3 Entering the ASCII Z Command Interface (via RS-232)

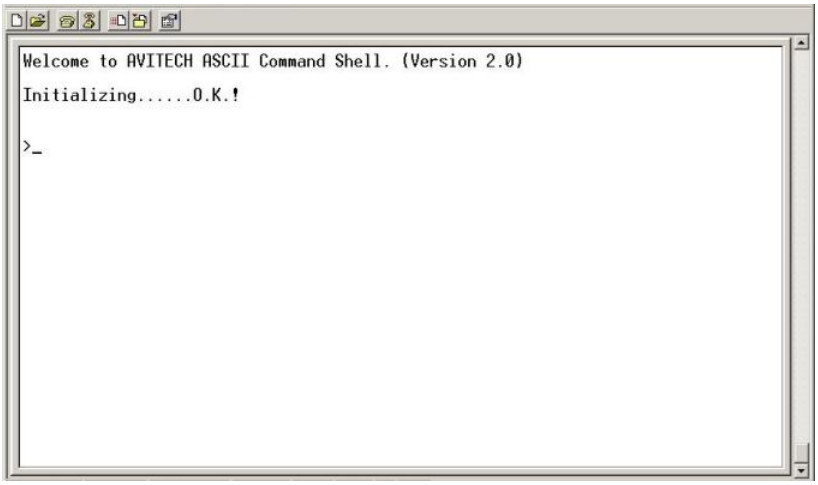
To startup the ASCII Z command interface, perform the following steps:

1. Connect the HyperTerminal's COM port (computer) to the Titan RS-232 port, and make sure that power supply is available.

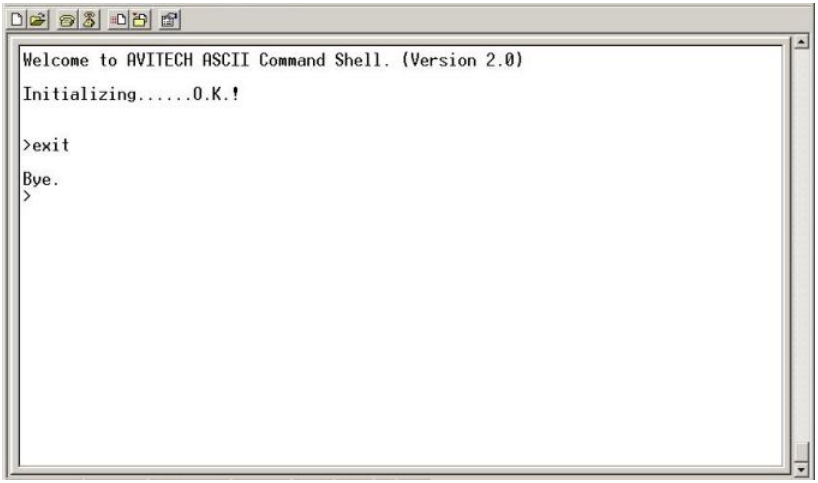
2. Connect the power cord to the Titan so that it will use the default baud rate (57600 bps) to transmit the startup signal.


AX110xx family bootloader v2.0.0
1. Execute Runtime.
2. Download runtime via RS232.
3. Download runtime via Ethernet.
4. Download new bootloader via Ethernet.
Please input 1,2,3 or 4 to execute above :
Wait runtime code.
Starting up ....
Initializing I2C bus in I2C_FAST I2C_7BIT I2C_MASTER_MODE...OK!
Initializing GCONFIG...Read EEPROM data...
EEPROM DATA: 21 bc 03 80 30 00 0e 00 00 21 23 00 f2 05 10 e0
1d 19 87 00 ff ff ff ff 10 03 00 a8 c0 00 ff ff
ff ff
Initializing software timer module...OK!
Module ID is 0x3
UB_FPGAConfigure...OK!
Initializing high speed UART...OK!
Initializing file system...OK!
Initializing ethernet and TCP/UDP command server...OK!
MAC Address = 0-23-21-0-0-e
IP Address = 192.168.0.151
Initializing RS-232 command server...OK!
RS-232 COM port is working in Normal mode at 57600bps
Initializing RS-485 command server...OK!

3. Press **Enter** to login to the ASCII Z command interface. When the HyperTerminal's command prompt "**>**" symbol appears, you can start entering ASCII Z commands.



4. To logout of the ASCII Z command interface, type **`exit`** and press **Enter**.



3.4 Entering the ASCII Z Command Interface (via IP)

To startup the ASCII Z command interface, perform the following steps:

1. Make sure you have a binary file editing program installed in your computer.
2. Run the binary file editing program and use the following command syntax to create and save the sample binary file–

```
unsigned char 0x55,0xAA;                              //command head
unsigned char 0xF8,~0xF8;                             //command ID
unsigned char strlen(prompt$)+2,~(strlen(prompt$)+2); //command length
unsigned char FunctionID;                             //must be 0x07
unsigned char prompt$[];                              //must end by 0x00 !!!
unsigned char 0x00;                                   //command tail
```

Using the below binary text string as an example–

0x55 0xAA 0xF8 0x07 0x0B 0xF4 0x07 "ZA 000000" 0x00

Execute "ZA 000000" = arranges all windows to its proper size and position

> **NOTE:** The double-quote "" of sample string "ZA 000000" is just for string expression, there are no quote characters (0x22) in the command contents (actual memory dump of command).

Going back to our sample binary text string listed above–

0x55 0xAA 0xF8 0x07 0x0B 0xF4 0x07 "ZA 000000" 0x00

It is therefore composed of the following parts (follow the color coding)–

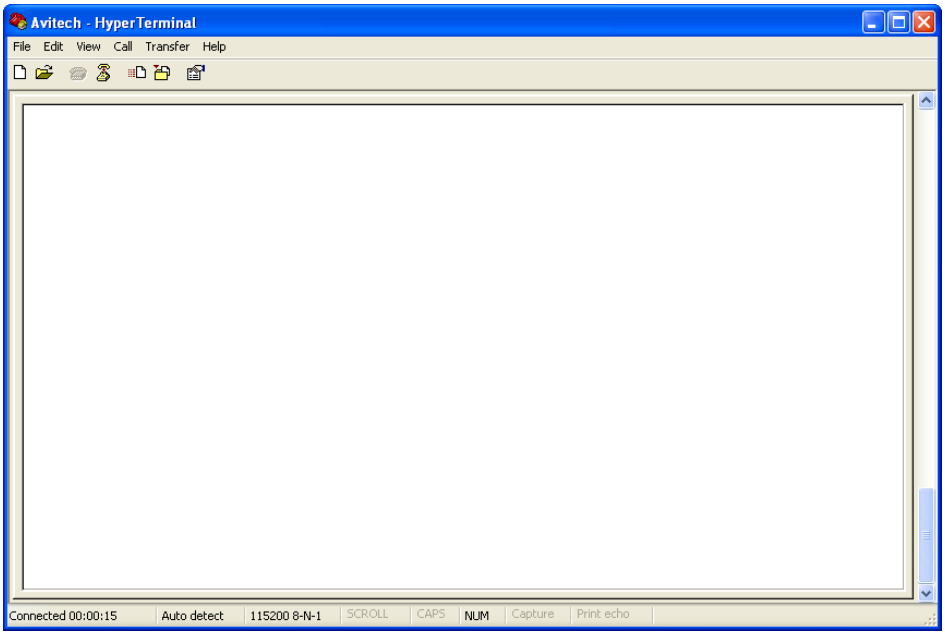
0x55 0xAA 0xF8 0x07 0x0B 0xF4 0x07

0x5A 0x41 0x20 0x30 0x30 0x30 0x30 0x30 0x30 0x00(end of string)

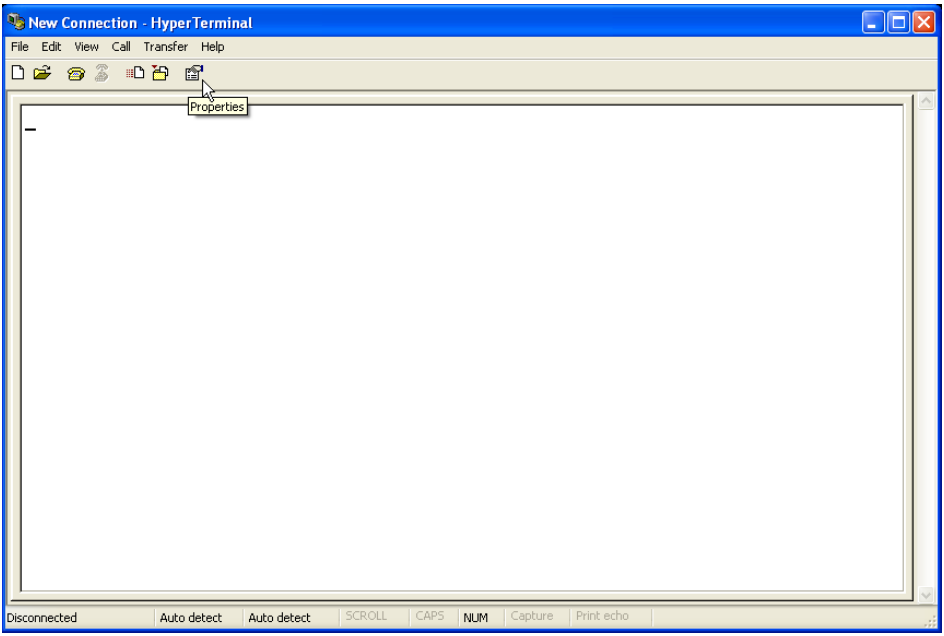
0x00(command tail)

3. Connect the HyperTerminal's RJ-45 port (computer) to the Titan **IP** port.

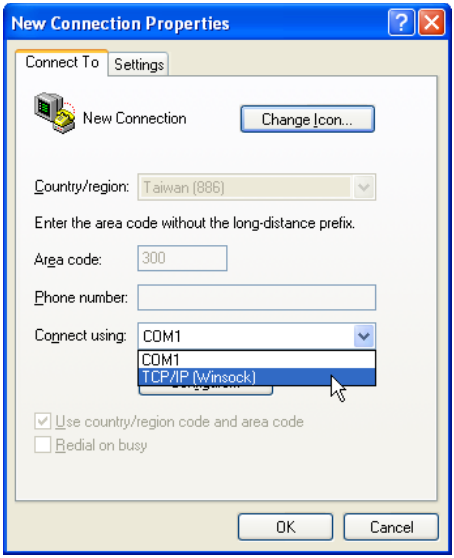
4. On your computer, click **Start→All Programs→Accessories→ Communications→HyperTerminal**. The following screen will appear.



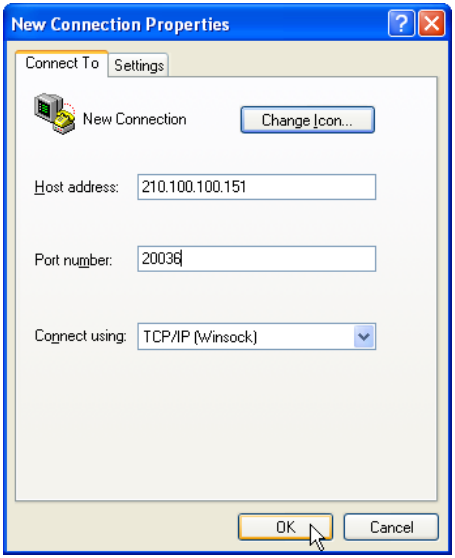
5. Click the **Properties** icon.



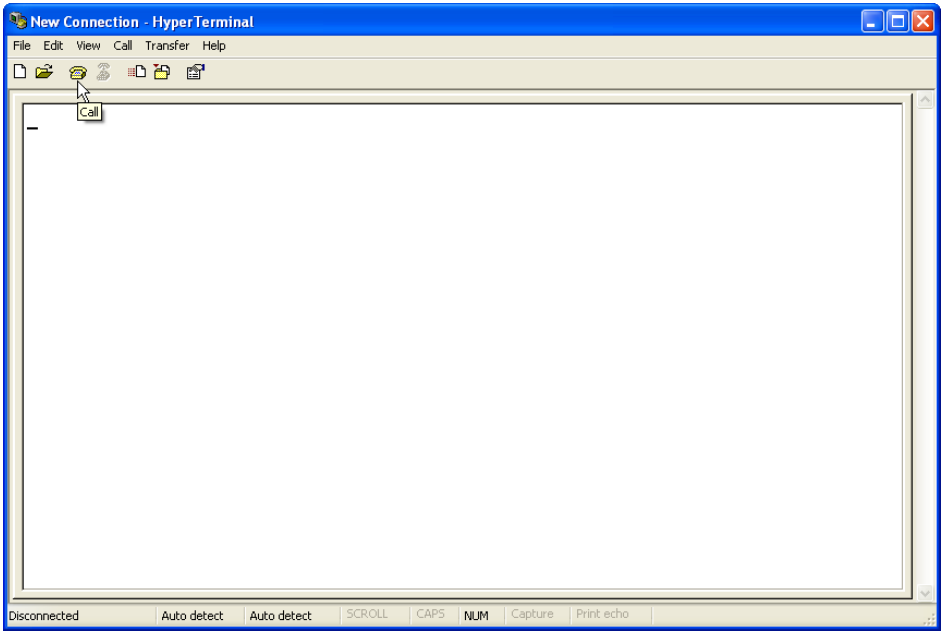
6. The following screen will appear. Select **TCP/IP (Winsock)**.



7. Enter “210.100.100.151” for **Host address** and “20036” for **Port number**. Then click **OK** to continue.

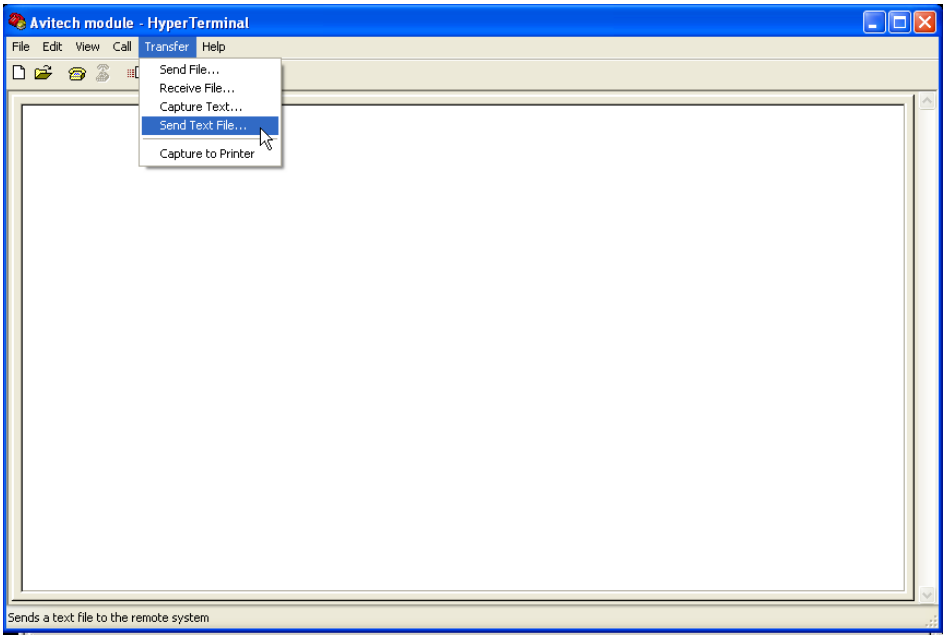


8. Click the **Call** icon.

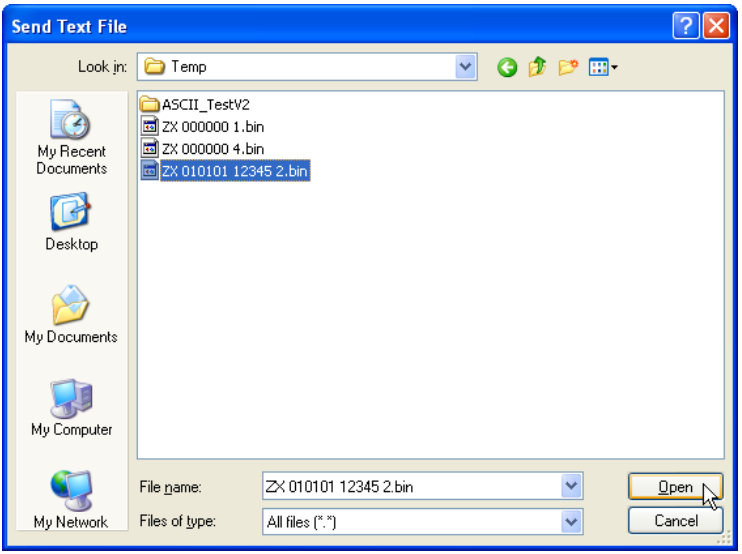


9. When the next screen appears, assign a **Name** to the connection. Then click **OK**.

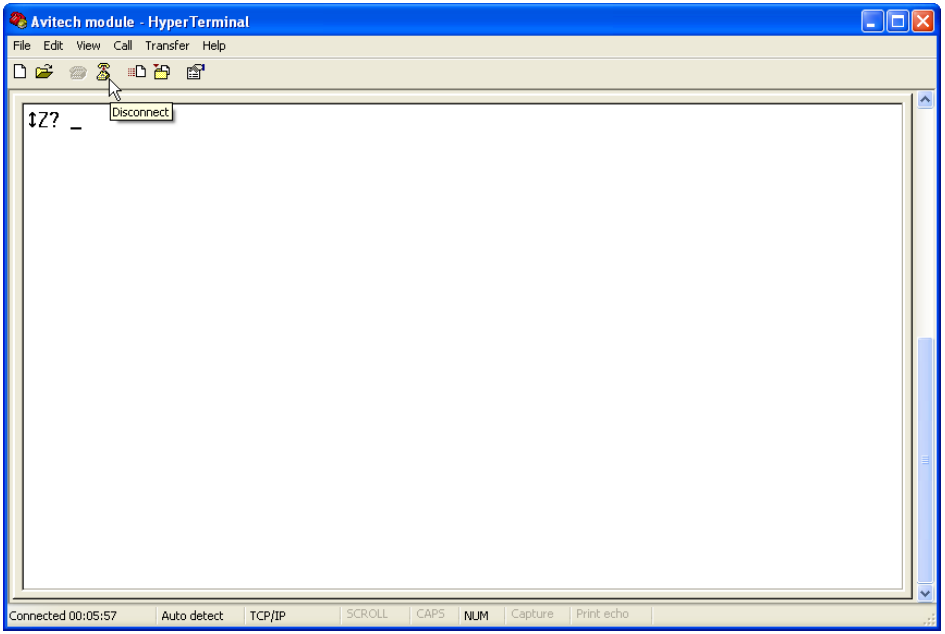
10. Click **Transfer→Send Text File**.



11. When the next screen appears select the binary file and then click **Open**.

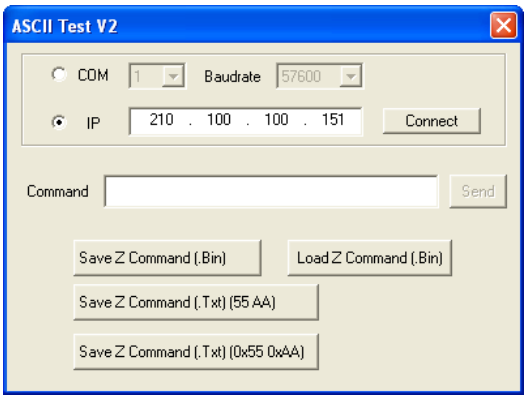


12. After sending the text file, click the **Disconnect** button to end the call.



Using the ASCII Test Utility

A proprietary ASCII Test utility can be used to simplify the creation of BIN file, loading of previously saved BIN file, as well as generating two types of text files (for use on third-party programs). Upon double-clicking the "ASCII_TestV2.exe" file, the following window appears.



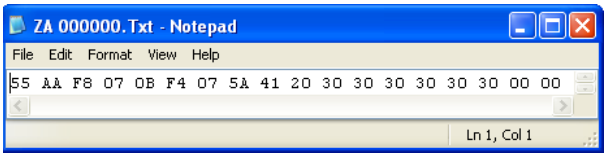
Make sure you enter the correct **IP** address assigned to your Titan module(s), and then click the **Connect** button.

Based on the example of the previous section using the "ZA 000000" command, you can do the following:

- Save Z Command (.Bin)
  By keying in "ZA 000000" (without the quote symbols) in the **Command** window, clicking this button allows you to generate and save the "ZA 000000.bin" file for use with the HyperTerminal utility.
- Load Z Command (.Bin)
  Allows you to load (select) a previously saved Bin file. "ZA 000000" would automatically appear in the **Command** window. Then click the **Send** button.

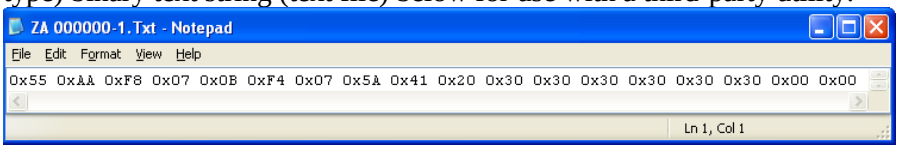
- Save Z Command (.Txt) (55 AA)

  By keying in “ZA 000000” (without the quote symbols) in the **Command** window, clicking this button allows you to generate the example (first type) binary text string (text file) below for use with a third-party utility.



- Save Z Command (.Txt) (0x55 0xAA)

  By keying in “ZA 000000” (without the quote symbols) in the **Command** window, clicking this button allows you to generate the example (second type) binary text string (text file) below for use with a third-party utility.


ZA 000000-1.Txt - Notepad
File Edit Format View Help
0x55 0xAA 0xF8 0x07 0x0B 0xF4 0x07 0x5A 0x41 0x20 0x30 0x30 0x30 0x30 0x30 0x30 0x00 0x00
Ln 1, Col 1

Release the IP from Avitech Module

In case the third-party device that is currently connected (via IP) to the Titan module wants to effect a disconnection (e.g., to be able to use the Phoenix-G program to connect the third-party device to the Titan module), use the below binary text string–

0x55 0xAA 0xF8 0x07 0x06 0xF9 0x07 “exit” 0x00

Execute “exit” = release the IP from Avitech module

> **NOTE:** The double-quote symbol “” of sample string “exit” is just for string expression, there are no quote characters (0x22) in the command contents (actual memory dump of command).

Going back to the binary text string listed above–

0x55 0xAA 0xF8 0x07 0x06 0xF9 0x07 “exit” 0x00

It is therefore composed of the following parts (follow the color coding)–

0x55 0xAA 0xF8 0x07 0x06 0xF9 0x07

0x65 0x78 0x69 0x74 0x00(end of string)

0x00(command tail)

3.5 ASCII Z Command Format

The ASCII Z command is comprised of the following parts:

Header	Group/Module/Window Assignment	Parameter 1	Parameter 2	. . .

The following is a list of rules to follow when entering the ASCII Z command:

- It is acceptable to enter commands in small or capital letters, and the five columns are separated by a space.
- **Header** = **z** + command character
- **Group/Module/Window Assignment (GGMMPP)** = is comprised of six Arabic numerals. This is used in designating the device's Group/Module/Window Assignment.

  Group = is comprised of the first two numbers (**01** – **99**), **00** is used to pertain to all groups.

  Module = is comprised of the middle two numbers (**01** – **n**), **00** is used to pertain to all modules.

  Window Assignment = is comprised of the last two numbers (**01** – **04**), **00** is used to pertain to all window assignments.
- **Parameter 1** of color assignment (**RRRGGGBBB**) = is comprised of nine Arabic numerals, this is used in designating the color.
- **Parameter 2** of on / off switch = "**1**" signifies ON while "**0**" signifies OFF.

The following is a list of available ASCII Z commands:

ZA

Format: **ZA GGMMPP** [NByN(**2**,**3**,……)] [Nth(**1**,**2**,……)]

Function: to set the automatic arrangement of windows and clock.

Examples: **ZA 010900 2 1**
Set group 1, module 9, to a 2×2 map position 1,2,3,4 (quad).
ZA 010000 2 1
Set all modules in group 1 to quad.
ZA 010202 3 2
Place group 1, module 2, window 2 to a 3×3 map position 2.
ZA 010200 6 13
Place group 1, module 2, to a 6×6 map position 13,14,15,16.
ZA 000000
Automatically arrange all groups' windows to the optimum size and position.
ZA 010199 3 9
Place clock of group 1, module 1, to a 3×3 map position 9.

ZC

Format: **ZC GGMMPP B**[order]/**L**[abel] **RRRGGGBBB** (red ratio **000** – **255**, green ratio **000** – **255**, blue ratio **000** – **255**) (**N**o**D**im**C**olor)

Function: to set the border of the window (with / without dimming effect), label, and the clock's background color.

Description: **B**[order] to signify the border of the window.
L[abel] to signify the label's background color.
[**N**o**D**im**C**olor] to signify the border's dimming effect. You can add [**N**o**D**im**C**olor] to remove the border's dimming effect. Just enter **NDC** to signify **N**o**D**im**C**olor.

Examples: **ZC 010101 B 000255000**
sets the border color of group 1, module 1, window 1, as dim green.
ZC 020202 B 255000000 ndc
sets the border color of group 2, module 2, window 2, as pure red.
ZC 030303 L 000000255
sets the label's background color of group 3, module 3, window 3, as dim blue.
ZC 000099 B 255000255
sets the clock color as pink.
ZC 000099 L 255000255
sets the clock label's background color as pink.

ZE

Format: **ZE GGMM 1** (on) / **0** (off)

Function: to turn on / off echo, command response time would be much faster when echo is turned off.

Examples: **ZE GGMM 0**
Turn echo off for GGMM's RS-232.

ZF

Format: **ZF GGMMPP 1** (on) / **0** (off)

Function: to turn on / off the video window's full screen mode.

Examples: **ZF 010104 1**
sets group 1, module 1, window 4, to full screen mode display.
ZF 010104 0
disables full screen mode for group 1, module 1, window 4, and reverts it back to its former display size.

ZI

Format: **ZI GGMMPP** (**PP** is **99** = clock) clock channel

Function: to set the input channel.

Description: For the clock, the channel values are **1** = internal (also known as "free run" – set by each module), **6** = NTP (Network Time Protocol).

Examples: **ZI GGMM99 1**
sets GGMM clock time to synchronize to internal.

ZJ

Format: **ZJ GGMMPP I**[mage] / **G**[ain]

Function: to automatically adjust the analog VGA signal entering the **DVI-I Input** port.

Description: **I**[mage] will automatically adjust the image's position and size. **G**[ain] will automatically adjust the image gain.

Examples: **ZJ 000000 I**
automatically adjust the image's position and size on all the module(s) for all the group(s).
ZJ 020000 G
automatically adjust the image gain on all the module(s) in group 2.

ZK

Format: **ZK GGMM P**[reset] **S**[et]/**L**[oad]/**1**–**5** [ID of analog clock] Preset ID (**1**–**8**) **HH MM SS**

Function: to set the time and method of counting.

Examples: **ZK GGMM P S 1 11 22 33**
sets GGMM's preset time ID1 = 11:22:33.
ZK GGMM P L 1
sets GGMM's time to be the same as preset time of ID1.
ZK GGMM P 2
use analog clock shape #2.

Format for control: **ZK GGMM** [**HH MM SS**] **0** (count down) / **1** (count up) / **2** (pause) / **3** (do not pause) / **4** (invert pause status) [counting method]
ZK GGMM 11 22 33
sets GGMM time to 11:22:33.
ZK GGMM 11 22 33 0
sets GGMM time to 11:22:33 and counting down.
ZK GGMM 1
sets GGMM clock to start counting upwards.

ZL

Format: **ZL GGMMPP 00** – **255** (transparency) **000000000** (text color RRRGGGBBB) **000000000** (label color RRRGGGBBB) "**TEXT**" (always center-aligned, label text string 32 ASCII characters maximum but it will depend on the font size. For example, upon entering label text "0123456789" at font size 3, Titan will just show "012345678").

> **NOTE:** Titan does not support transparency, but this parameter is necessary for compatibility with Avitech MCC-8004.

Function: to set the label's transparency, text, and text color; as well as clock.

Examples: **ZL GGMMPP 0 255000000 000000255 "CNN News Station"**
sets GGMMPP text color red, label color blue, with text "CNN News Station."
ZL GGMM99 0 255255255 000000255 "CLOCK"
sets clock text color white, background color blue, with text "CLOCK."

ZM

Format: **ZM GGMMPP ##** (resolution number) **N**o**A**uto arrangement

Function: to change the output resolution, the resolution number refers to the list of resolutions that Titan supports.

Description:

Resolution	Vertical Frequency		
	50 Hz	60 Hz	75 Hz
800 × 600	42	1	47
1024 × 768	31	2	11
1280 × 720	30	15	48
1280 × 768	32	22	49
1280 × 1024	29	9	12
1360 × 768	38	20	21
1400 × 1050	34	35	50
1440 × 900	46	45	51
1600 × 1200	39	10	52
1680 × 1050	41	40	53
1920 × 1080	28	26	N/A
1920 × 1200	37	36	N/A

252: VESA timing
255: normal timing

Examples: **ZM 010000 10**
sets all the modules in group 1 to display at 1600×1200 resolution at 60 Hz vertical frequency, and automatically arrange all windows to the proper size and position.
ZM 000000 9 NA
sets all the modules in all the groups to have a 1280×1024 resolution at 60 Hz vertical frequency with no automatic arrangement.

ZN

Format: **ZN GGMMPP** (when **PP** is **99** = clock) option (**O**[SD]/**B**[order]/ **L**[abel]/**I**[mage]/**G**[ain]/**W**[indow]) **1** (on) / **0** (off)

Function: to turn on / off various options.

Examples:

ZN 000000 O 0
turns off the OSD (on screen display) of all modules of all groups.

ZN 010100 O 1
turns on the OSD of module 1, group 1.

ZN 020202 B 0
turns off the border of window 2, module 2, group 2.

ZN 030303 L 1
turns on the label of window 3, module 3, group 3.

ZN 050505 I 1
turns on automatic image adjustment function of group 5, module 5, VGA window 5.

ZN 050505 G 0
turns off automatic gain function of group 5, module 5, VGA window 5.

ZN 020299 B 0
turns off the clock border of module 2, group 2.

ZN 030399 L 1
turns on the clock label of module 3, group 3.

ZN 040400 W 0
turns off all windows of module 4, group 4.

ZN 040499 W 0
turns off the clock of module 4, group 4.

NOTE:
- Turning on automatic adjust and automatic gain only affects the VGA window.
- The image window will be positioned at (0,0) and be 1/16 of display size upon turning on a closed image window.

ZP

Format: **ZP GGMMPP L**[oad] / **S**[ave] "filename**.GP#**"
ZP GGMM (for listing presets)

NOTE:
- When listing presets GG = 00 or MM = 00 represents the master module.
- This command only works in HyperTerminal, ACP does not support this command.

Function: load a previously saved preset or save current layout to a preset, as well as list presets.

Description: If the filename includes space(s), use double quotation marks to signify the complete filename.
If the filename is not specified when saving the file, system will backup the file into flash memory.

Examples: **ZP 010000 L "Group 1.GP1"**
sets all the modules in group 1 to load the previously saved **`Group 1.GP1`** preset file
ZP 020000 S "Group 2.GP2"
saves the current layout of all modules in group 2 to a preset file **`Group 2.GP2`**
ZP 000000 S
saves the file of all modules in all the groups into flash memory.
ZP 0000
lists the master presets (this command only works in HyperTerminal, ACP does not support this command).
ZP 0203
lists group 2, module 3's, presets (this command only works in HyperTerminal, ACP does not support this command).

ZR

Format: **ZR GGMMPP SD** (width rate) **SD** (height rate) **HD** (width ratio) **HD** (height ratio)

Function: to lock and adjust the video ratio.

Examples: **ZR GGMM01 4 3 16 9**
sets GGMM01 SD video ratio as 4:3, HD video as 16:9.
ZR 000000 16 9 4 3
sets all windows' SD video ratio as 16:9, HD video as 4:3.
ZR GGMMPP 7 12 7 12
sets GGMMPP's SD and HD video ratio as 7:12.
ZR GGMMPP 0 0 0 0
disables the function by setting the width rate or height rate = 0.

ZT

Format: **ZT GGMMPP 1** [Titan only have tally 1 available] **1** (on) / **0** (off) **#** (color index number)

Function: turn on or off the tally for a window or all the windows in a group. The color index number is a list of colors that tally can be.

Description: Designate the action of tally. The following table shows the color index.

Index	Color
1	Black
2	Red
3	Green
4	Yellow
5	Blue
6	Pink
7	Light Blue
8	White

Examples: **ZT 000000 1 1 6**
activate tally 1 for all the window(s) in all the module(s) for all the group(s) with pink color.
ZT 010203 1 0
close tally 1 for group 1, module 2, window 3.

NOTE: Upon changing a tally color, the same color is applied to the other tally of the same module.

ZW

Format: **ZW GGMMPP** (when **PP** is **99** = clock) **X** position **Y** position **W**(idth) **H**(eight)
ZW GGMMPP C[rop] **1** (on) / **0** (off) **X** position **Y** position **W**(idth) **H**(eight)

Function: to set the window's position and size, appear as the topmost window of a module, and crop.

When cropping, the width and height are calculated using the module output display size. For example, if the module output display timing is 1280×1024 at 60 Hz, and you just want to display the right bottom quarter of the input image:

Crop X = 1280 / 2 = 640 (crop width = 1280 / 2 = 640)

Crop Y = 1024 / 2 = 512 (crop height = 1024 / 2 = 512)

There is no need to take into consideration the input image size and position, or the size of the window. When cropping it is always assumed that the input image size is equal to the module's output display size.

Examples: **ZW 010101**
sets group 1, module 1, window 1, as the top window.
ZW 010101 100 200 300 400
sets group 1, module 1, window 1, at (100,200) top-left position and (300,400) bottom-right position.
ZW 010101 0 0 0 0
turns group 1, module 1, window 1, off by setting the width or height to be 0.
ZW 010102 C 1 100 100 320 240
crop group 1, module 1, window 2 from (100,100) top-left position up to (320,240) bottom-right position.
ZW 010104 C 0
disables crop on group 1, module 1, window 4.
ZW 010199 0 0 320 240
sets the clock window position at (0,0) with size 320×240.

ZX

Format: **ZX GGMMPP** (when **PP** is **99** = clock) **"**label text**"** (supports ASCII characters only – include the quotation marks) **#** (font size **1** – **4**)

Function: to change the label text and font size.

Description: Include the quotation marks when entering the label text.
The label will appear center-aligned on the window, maximum of 32 characters for each label.

Examples: **ZX 000000 "Input 1"**
Input 1 will appear as the label for all the window(s) in all the module(s) of all the group(s).
ZX 000000 3
sets all window's label font size to 3.
ZX 010199 "CLOCK" 4
sets the clock's label text as "CLOCK" and having font size of 4.

4 Firmware Upgrade

This chapter familiarizes you with updating the firmware of your Avitech Titan, as well as resetting it to the factory-default value.

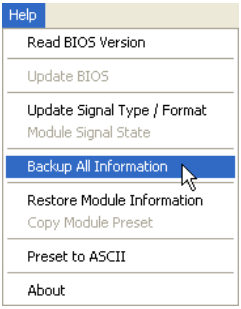
4.1 Updating the Firmware

The firmware for Titan is divided into:

- DS80C400 firmware
- FPGA MB firmware
- FPGA UB firmware
- 1601 firmware
- OSD firmware

> **IMPORTANT:**
> - When updating the DS80C400 firmware together with any of the following: FPGA MB / FPGA UB / 1601 / OSD firmware; make sure to first update the FPGA MB / FPGA UB / 1601 / OSD firmware before updating the DS80C400 firmware.
> - The FPGA MB, FPGA UB, 1601, and OSD firmware can be updated at the same time or individually.

NOTE: Before updating the firmware, perform a back-up by clicking **Help**, and then click **Backup All Information**.

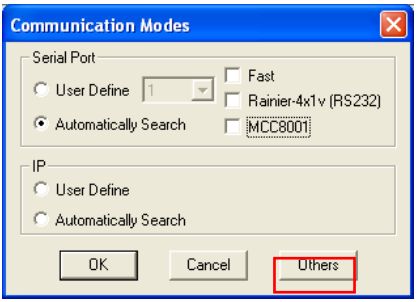


After the firmware has been updated, clear the Flash memory or restore the particular module to the factory-default setting (refer to the last section of this user manual for details) to prevent display error.

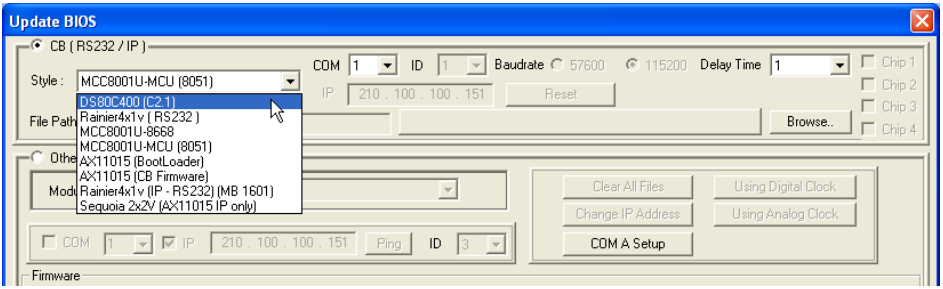
DS80C400 Firmware

To update the DS80C400 firmware, perform the following steps:

1. Connect the power cable to the **100-240V AC** power jack on the rear panel of the Titan and the other end to an electrical outlet.
2. Use a serial (RS-232) cable and connect one end to the Titan rear panel's **RS-232** port and the other end to the computer's serial port.
3. Run the Phoenix-G software by double-clicking the "Phoenix-G-V31x.exe" file. Click **Others** when the following screen appears.



4. When the following screen appears, select **CB (RS232 / IP)** and on the **Style** drop-down menu, select **DS80C400 (C2.1)**.



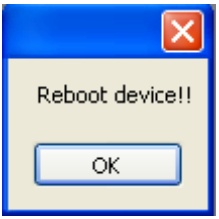
5. Click the **Browse** button to specify the location of the firmware file and select "VCC-8000-DS80C400.hex."

6. Push the number **1** dip switch located on the Titan rear panel downward to the **ON** position.

7. Click the **Update** button located on the lower left portion of the screen. The progress of update would be shown onscreen.

8. Push the number **1** dip switch upward to the default position.

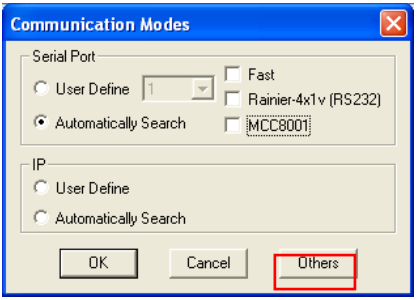
9. When the next screen appears; pull off the power cord from the power jack to shutdown the Titan. Next, re-attach the power cord to restart the Titan.



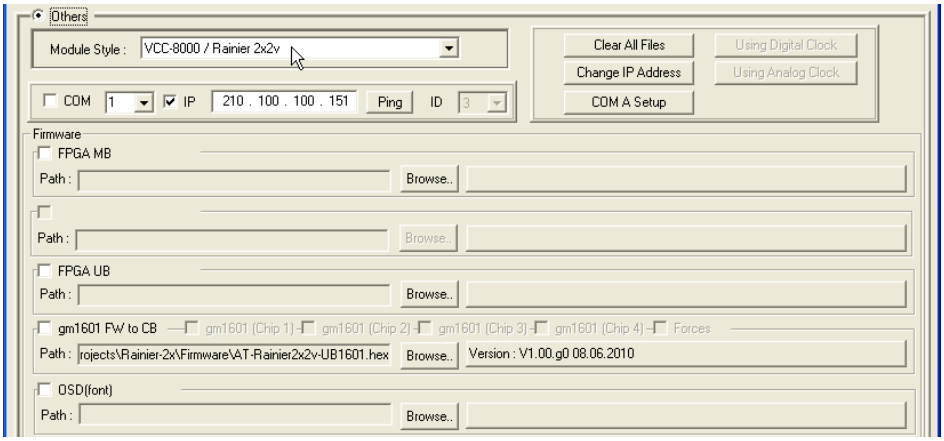
FPGA MB Firmware

To update the FPGA MB firmware, perform the following steps:

1. Run the Phoenix-G software by double-clicking the "Phoenix-G-V31x.exe" file. Click **Others** when the following screen appears.



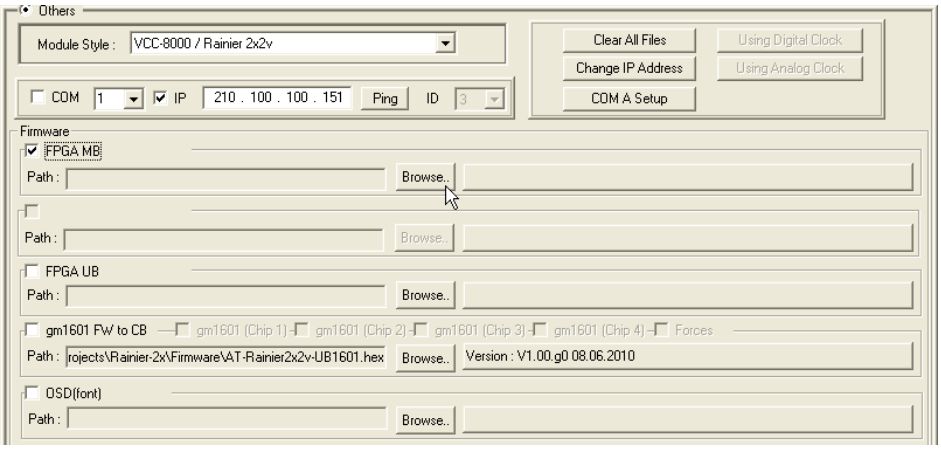
2. When the following screen appears, select **Others** and on the **Module Style** drop-down menu select **VCC-8000** (Titan).



3. Click to select the **IP** checkbox with the factory-default **210.100.100.151** value. In case you have changed the IP address of your Titan, make sure to enter the correct IP address.

> **NOTE:** In case you are not sure of your module's IP address and want to find out, click **COM** and make sure that the COM port number is the same as the connected computer, then click the **Change IP Address** button to find out the IP address. Afterwards, click **Cancel** to exit.

4. Click to select the **FPGA MB** checkbox, and then click the **Browse** button to specify the location of the firmware file and select "AT-VCC-8000MB-C12-yyyymmdd.rbf" (where **yyyymmdd** stands for the release year, month, and day of your firmware file).



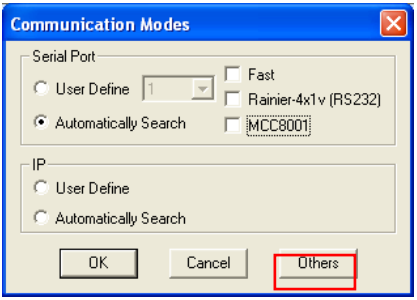
5. Click the **Update** button located on the lower left portion of the screen.
6. Reboot (unplug and re-plug the power cord) the Titan when FPGA MB firmware update is successful.

> **NOTE:** Shutdown and startup of Titan needs to be done to completely update the FPGA MB firmware.

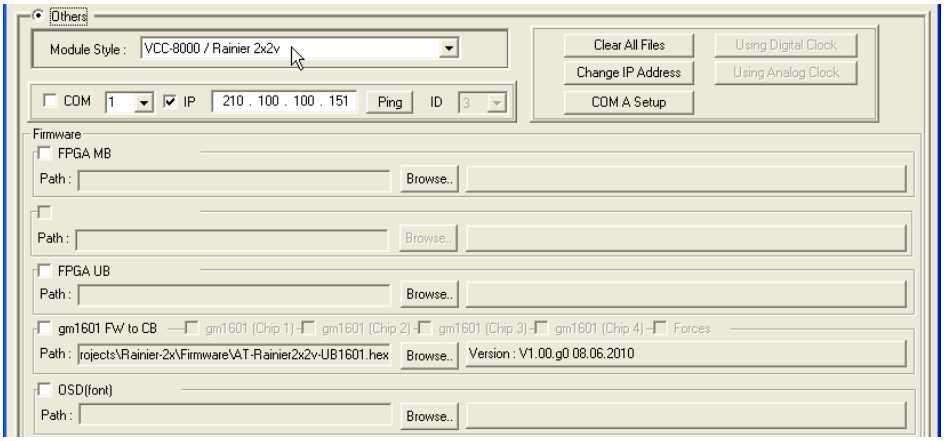
FPGA UB Firmware

To update the FPGA UB firmware, perform the following steps:

1. Run the Phoenix-G software by double-clicking the "Phoenix-G-V31x.exe" file. Click **Others** when the following screen appears.



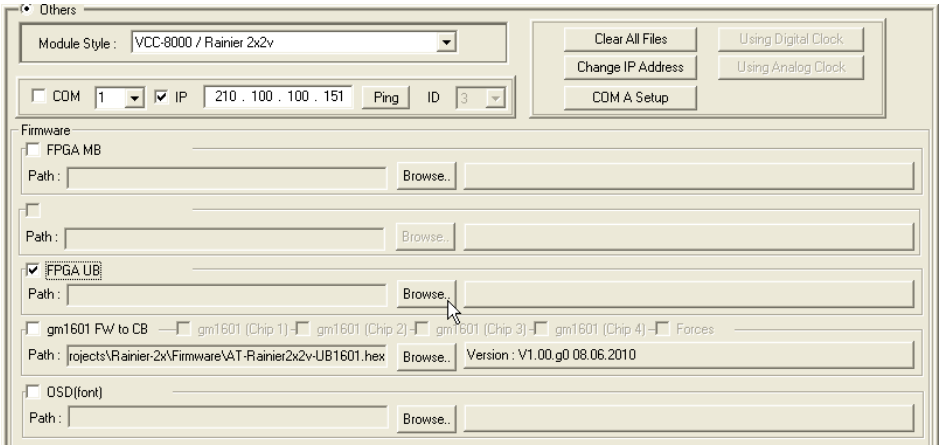
2. When the following screen appears, select **Others** and on the **Module Style** drop-down menu select **VCC-8000** (Titan).



3. Click to select the **IP** checkbox with the factory-default **210.100.100.151** value. In case you have changed the IP address of your Titan, make sure to enter the correct IP address.

> **NOTE:** In case you are not sure of your module's IP address and want to find out, click **COM** and make sure that the COM port number is the same as the connected computer, then click the **Change IP Address** button to find out the IP address. Afterwards, click **Cancel** to exit.

4. Click to select the **FPGA UB** checkbox, and then click the **Browse** button to specify the location of the firmware file and select "AT-VCC-8000UB-B.rbf."



5. Click the **Update** button located on the lower left portion of the screen.

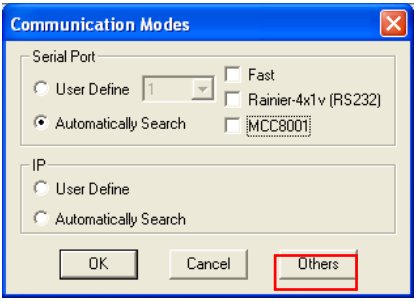
6. Reboot (unplug and re-plug the power cord) the Titan when FPGA UB firmware update is successful.

> **NOTE:** Shutdown and startup of Titan needs to be done to completely update the FPGA UB firmware.

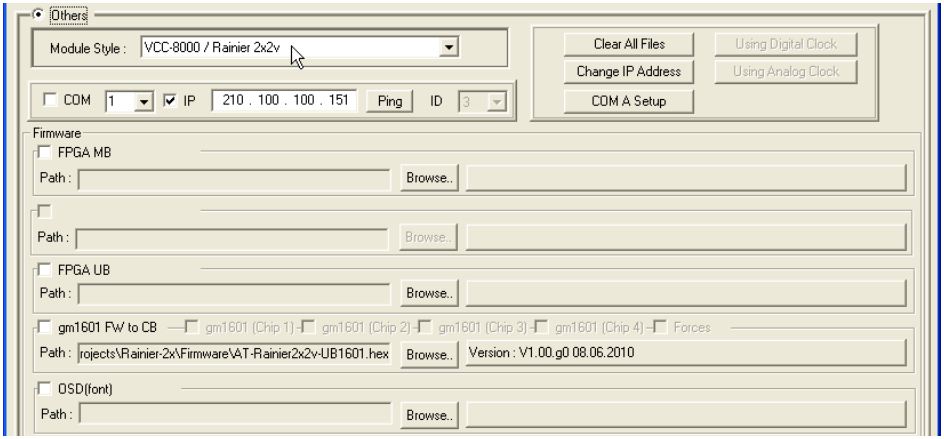
1601 Firmware

To update the 1601 firmware, perform the following steps:

1. Run the Phoenix-G software by double-clicking the "Phoenix-G-V31x.exe" file. Click **Others** when the following screen appears.



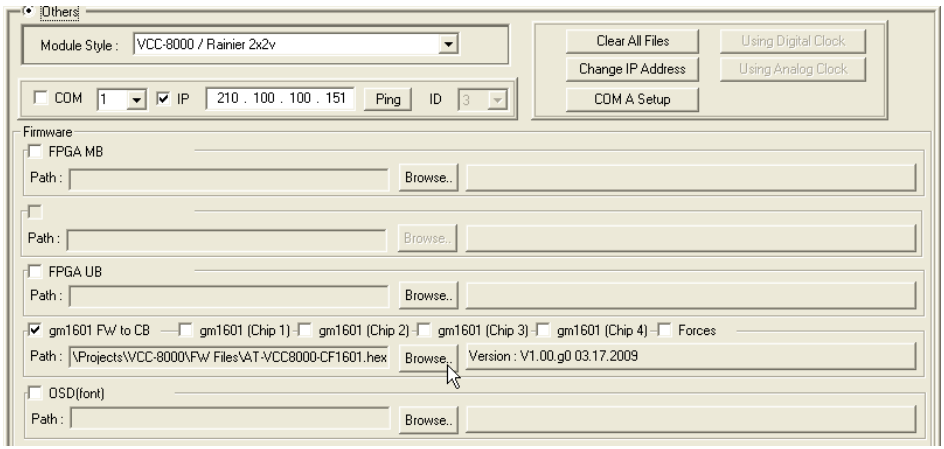
2. When the following screen appears, select **Others** and on the **Module Style** drop-down menu select **VCC-8000** (Titan).



3. Click to select the **IP** checkbox with the factory-default **210.100.100.151** value. In case you have changed the IP address of your Titan, make sure to enter the correct IP address.

> **NOTE:** In case you are not sure of your module's IP address and want to find out, click **COM** and make sure that the COM port number is the same as the connected computer, then click the **Change IP Address** button to find out the IP address. Afterwards, click **Cancel** to exit.

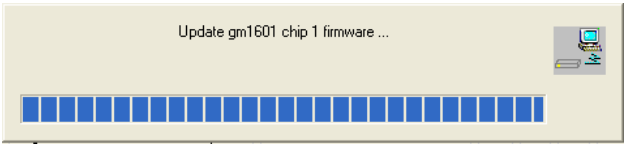
4. Click to select the **gm1601 FW to CB** checkbox.



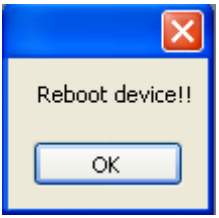
5. Click to select **gm1601 (Chip 1)** and **gm1601 (Chip 2)** when using the Titan-8002V, Titan-8004c, and Titan-8004U or,
click to select **gm1601 (Chip 1)**, **gm1601 (Chip 2)**, **gm1601 (Chip 3)**, and **gm1601 (Chip 4)** when using the Titan-8004V, Titan-8008c, and Titan-8008U.

6. Click the **Browse** button to specify the location of the firmware file and select "AT-VCC8000-CF1601.hex."

7. Click the **Update** button located on the lower left portion of the screen. The progress of update will be shown onscreen.



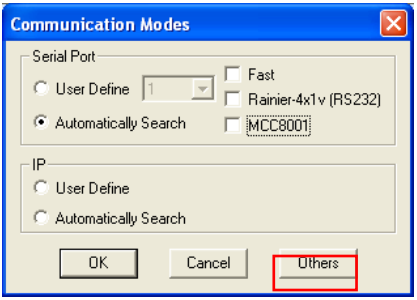
8. When the next screen appears; pull off the power cord from the power jack to shutdown the Titan. Next, re-attach the power cord to restart the Titan.



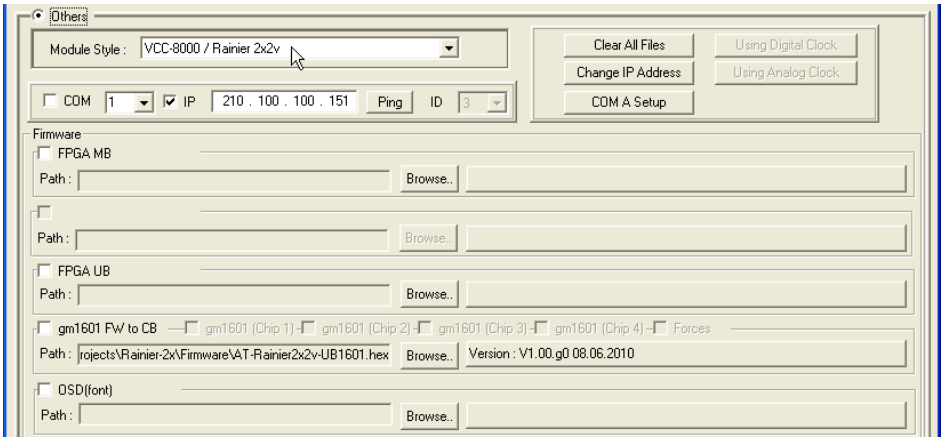
OSD Firmware

To update the OSD firmware, perform the following steps:

1. Run the Phoenix-G software by double-clicking the "Phoenix-G-V31x.exe" file. Click **Others** when the following screen appears.



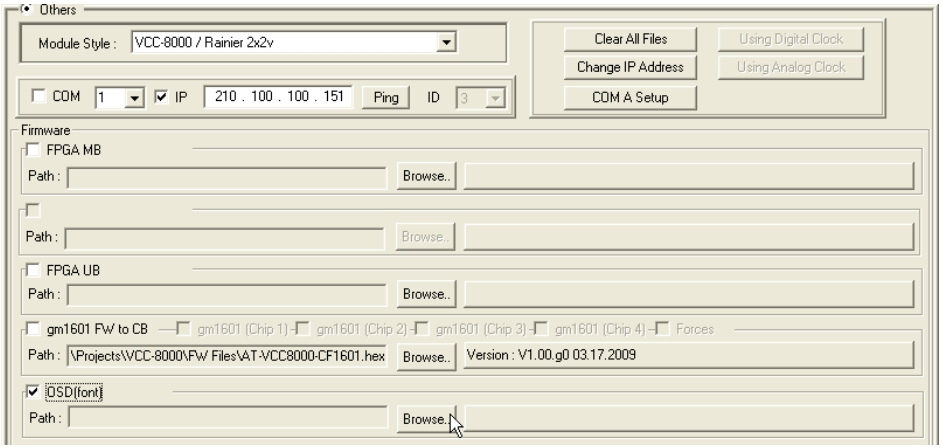
2. When the following screen appears, select **Others** and on the **Module Style** drop-down menu select **VCC-8000** (Titan).



3. Click to select the **IP** checkbox with the factory-default **210.100.100.151** value. In case you have changed the IP address of your Titan, make sure to enter the correct IP address.

> **NOTE:** In case you are not sure of your module's IP address and want to find out, click **COM** and make sure that the COM port number is the same as the connected computer, then click the **Change IP Address** button to find out the IP address. Afterwards, click **Cancel** to exit.

4. Click to select the **OSD** checkbox, and then click the **Browse** button to specify the location of the firmware file, and then select "AT-VCC8000-DATA-V101.OSD."



5. Click the **Update** button located on the lower left portion of the screen.

6. Reboot (unplug and re-plug the power cord) the Titan when OSD firmware update is successful.

> **NOTE:** Shutdown and startup of Titan needs to be done to completely update the OSD firmware.

4.2 Resetting to the Factory-Default State (Clearing the Flash Memory)

To reset your Titan to the factory-default state, perform the following steps:

Method 1

1. Power-off the Titan by unplugging the power cord.

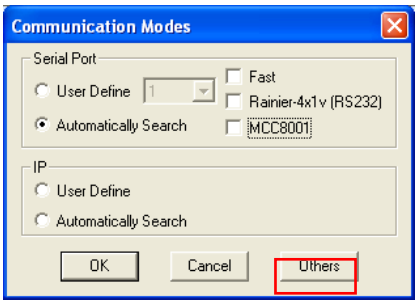
2. Push the number **2** dip switch located on the Titan rear panel downward to the **ON** position.

3. Power-on the Titan by plugging in the power cord (make sure that power is available).

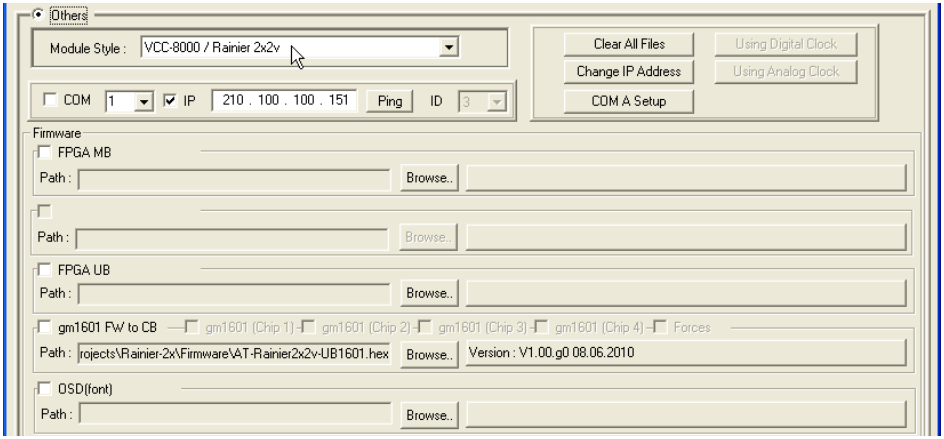
4. Push the number **2** dip switch upward to the default position.

Method 2

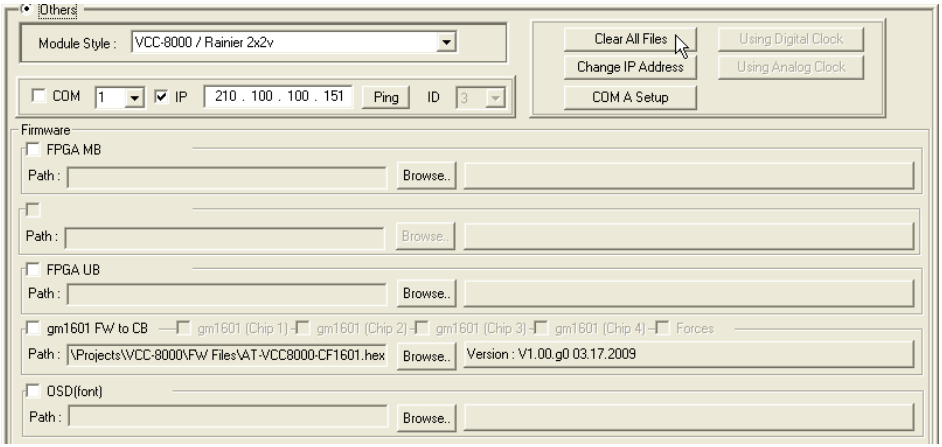
1. Run the Phoenix-G software by double-clicking the "Phoenix-G-V31x.exe" file. Click **Others** when the following screen appears.



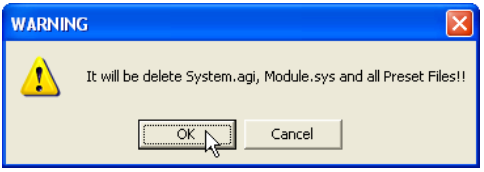
2. When the following screen appears, select **Others** and on the **Module Style** drop-down menu select **Titan**.



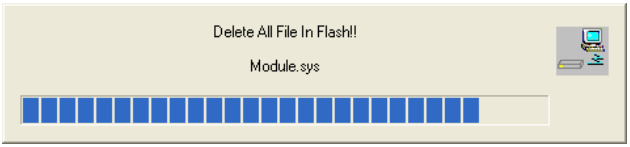
3. Click **Clear All Files**.



4. When the following screen appears, click **OK** to continue.



5. The progress of deleting the files will be shown onscreen.



6. When the following screen appears, reboot the Titan module to completely clear the flash memory and return it to the default state.